BEFORE THE
STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

In the Matter of

Niagara Mohawk Power Corporation d/b/a National Grid

Cases 20-E-0380 and 20-G-0381

December 3, 2020

Prepared Exhibit___(SCSP-1) of:

Staff Consumer Services Panel
(SCSP)

Chelsea Kruger
Utility Consumer Program
Specialist 3

Adam Polmateer
Utility Consumer Assistance
Specialist 4

Kayla Whitaker
Utility Analyst 1

Rebecca Sweeney
Utility Consumer Assistance
Specialist 2

John Sheevers
Utility Consumer Program
Specialist

Office of Consumer Services
State of New York
Department of Public Service
Three Empire State Plaza
Albany, New York 12223-1350

Exhibit__(SCSP-1)

Relied Upon NMPC Responses to Information Requests

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Date of Request: August 14, 2020 Request No. DPS-325
Due Date: August 24, 2020 NMPC Req. No. NM -359

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Kayla Whitaker

TO: National Grid, Shared Services Panel

SUBJECT: Service Quality Assurance Program – Escalated Customer Complaints

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. For each of the last five years (2015, 2016, 2017, 2018, and 2019), provide the total number of escalated customer complaints referred from the Public Service Commission (PSC) to NMPC.

2. For each of the last five years (2015, 2016, 2017, 2018, and 2019), provide the total number of resolved escalated customer complaints referred from the PSC to NMPC.

Response:

1-2.

Year	SRS	Hearings	Appeals
2015	147	9	2
2016	131	2	0
2017	140	11	0
2018	134	8	2
2019	93	5	3

SRS - Chargeable Complaints
Hearings - Customers dissatisfied with National Grid's response to the complaint and requested a Hearing
Appeals - Customers dissatisfied with the Commission's Appeal decision.

Please note that complaints that do not go to Hearing or Appeal are considered resolved.

Name of Respondent:	Date of Reply:
Jerry Miller	August 19, 2020

Date of Request: August 14, 2020 Request No. DPS-326
Due Date: August 24, 2020 NMPC Req. No. NM-360

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Kayla Whitaker

TO: National Grid, Shared Services Panel

SUBJECT: Residential Customer Appointments

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. For each of the last five years (2015, 2016, 2017, 2018, and 2019), provide the following:

   a. Total number of residential customer service appointments scheduled.

   b. Total number of residential customer service appointments missed.

   c. Total number of residential customer service appointments not completed, which are flagged by the Company to require a follow-up appointment, because the customer did not provide access to the property and/or the meter(s).

2. Provide a detailed breakdown of the average cost for a service appointment at a customer's premises. Include, at a minimum, the average time for appointments, labor cost for employees (hourly wages), cost for fuel, cost to roll out a vehicle, and any other expenses for miscellaneous items needed to complete a service appointment.

3. Provide a comprehensive list of reasons the Company may miss an appointment. Rank these reasons from most common to least common. Include any supporting documents that show how the Company classifies these missed appointments.

4. For each of the last five years (2015, 2016, 2017, 2018, and 2019), provide the average number of residential customer appointments scheduled per field representative in a month. Describe any seasonal variances and the reasons for such variances.

Response:

1. Appointments are not broken down or tracked according to the type of customer (*i.e.* residential vs. commercial). See below for the total number of appointments scheduled and missed, for calendar years ("CY") 2015-2019. The Company does not track appointments that are not completed because of lack of access. The customer will contact the Company to reschedule at their convenience, when access can be provided.

	2015	2016	2017	2018	2019
Appointments Scheduled	33,505	185,608	172,523	171,363	159,391
Appointments Missed	525	8,137	7,626	9,116	6,530

Note: NMPC CY 2015 - data reflects the 2-hr appointments only. Started tracking all day appointments in CY 2016

2. Below is a breakout for the average hourly labor cost plus overhead. This cost includes resources of multiple skill levels and is not limited to the resources that typically perform appointment work. The time an appointment takes varies, depending on the type of job.

Average Hourly Cost

	2019	2018	2017	2016	2015
CMS NIMO	$ 37.09	$ 35.97	$ 34.90	$ 33.85	$ 32.83
OT	$ 4.45	$ 4.32	$ 4.19	$ 4.06	$ 3.94
A&G	$ 11.13	$ 10.79	$ 10.47	$ 10.16	$ 9.85
Trans & Burdens	$ 30.04	$ 29.14	$ 28.27	$ 27.42	$ 26.59
Total Hourly Avg	**$ 82.71**	**$ 80.21**	**$ 77.83**	**$ 75.49**	**$ 73.21**

3. There is a daily reconciliation to verify if a missed appointment should result in an account credit; however, the Company does not track the root causes for missed appointments. In general, emergency work volumes could cause a late arrival to an appointment.

4. The Company does not track the information requested.

Name of Respondent: Phil Rodriguez

Date of Reply: August 24, 2020

Date of Request: August 14, 2020 Request No. DPS-327
Due Date: August 24, 2020 NMPC Req. No. NM-361

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Kayla Whitaker

TO: National Grid, Shared Services Panel

SUBJECT: Service Quality Assurance Program - Customer Service

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. For each of the last five years (2015, 2016, 2017, 2018, and 2019), provide the granular data that was used to calculate the Customer Service Quality Assurance Program (CSQAP) metric results shown in Exhibit__(SSP-6), including formulas used to calculate the annual performance results for each metric.

2. For each of the last five years (2015, 2016, 2017, 2018, and 2019), provide the following:

   a. The total number of residential customer transaction satisfaction surveys sent.

   b. The total number of residential customer transaction satisfaction surveys answered and returned to Company.

   c. A breakout of all scores for the residential customer transaction satisfaction survey.

3. Indicate the confidence level or margin of error for the Company's residential customer transaction satisfaction survey mechanism.

4. Does the Company utilize weighted averages when determining the percentages/totals for any monthly submitted Customer Service Performance Indicator (CSPI) reports or for the annually submitted Customer Service Quality Assurance Program (CSQAP) metrics?

   a. If yes, provide a list of all CSPI and CSQAP metrics that are calculated using a weighted average.

b. If the Company utilizes weighted averages, provide a detailed description of when this process first began within the Company's procedures. Include any supporting documents.

c. If the Company utilizes weighted averages, provide a detailed explanation of how the Company calculates this weighted average for the CSPI and CSQAP reports and include all supporting workpapers for the years from 2015 to 2019s.

Response:

1. Please see Attachment 1.

2.

a. Information on the total number of residential customer transaction satisfaction surveys sent will be provided by August 28, 2020.

b.

	2015	2016	2017	2018	2019
Number of Completes	7064	7151	7130	7146	7158

c.

Upstate New York Residential

	Satisfaction with Services (Q.28)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD	Penalty Threshold
2019		19	19	19	19	19	19	19	19	19	19	19	19	2019	
		85.1%	83.8%	80.3%	79.2%	85.5%	82.2%	84.8%	82.5%	85.6%	84.8%	86.3%	85.6%	83.8%	82.0%
	Base	596	593	600	595	595	607	599	595	598	592	592	596	7158	
2018	Satisfaction with Services (Q.28)	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18	Jul 18	Aug 18	Sep 18	Oct 18	Nov 18	Dec 18	YTD 2018	Penalty Threshold
		83.2%	81.4%	79.9%	85.1%	85.8%	81.8%	84.3%	85.1%	84.4%	84.2%	85.6%	83.9%	83.7%	82.0%
	Base	594	592	596	597	593	598	597	597	590	595	599	598	7146	--
2017	Satisfaction with Services (Q.28)	Jan 17	Feb 17	Mar 17	Apr 17	May 17	Jun 17	Jul 17	Aug 17	Sep 17	Oct 17	Nov 17	Dec 17	YTD 2017	Penalty Threshold
		81.8%	80.8%	85.5%	80.5%	81.2%	84.4%	83.5%	80.3%	81.1%	83.0%	83.7%	83.5%	82.4%	82.0%
	Base	588	595	594	594	597	591	594	598	597	594	594	594	7130	--
2016	Satisfaction with Services (Q.28)	Jan 16	Feb 16	Mar 16	Apr 16	May 16	Jun 16	Jul 16	Aug 16	Sep 16	Oct 16	Nov 16	Dec 16	YTD 2016	Penalty Threshold
		82.9%	82.2%	83.3%	83.8%	84.7%	82.5%	84.1%	84.7%	80.8%	83.6%	86.4%	84.5%	83.6%	82.0%
	Base	597	590	598	598	595	599	598	596	594	597	596	593	7151	--
2015	Satisfaction with Services (Q.28)	Jan 15	Feb 15	Mar 15	Apr 15	May 15	Jun 15	Jul 15	Aug 15	Sep 15	Oct 15	Nov 15	Dec 15	YTD 2015	Penalty Threshold
		84.4%	79.5%	83.6%	79.3%	84.8%	82.6%	81.8%	84.4%	81.6%	82.5%	85.7%	86.2%	83.0%	82.0%
	Base	584	584	590	585	591	592	593	591	591	587	589	587	7064	--

3. The Company's residential customer transaction satisfaction survey mechanism is conducted at a margin of error of +/- 1.0% at a 90% confidence level on a yearly basis.

4. The Company does not utilize weighted averages when determining the percentages/totals for any monthly submitted Customer Service Performance Indicator (CSPI) reports or for the annually submitted Customer Service Quality Assurance Program (CSQAP) metrics for Customer Satisfaction. Reported results are unweighted.

Name of Respondent:
Nicole Gilbody

Date of Reply:
August 24, 2020

Q28. Overall how satisfied are you with the services provided by National Grid?

	ContactDate	15-Jan	15-Feb	15-Mar	15-Apr	15-May	15-Jun	15-Jul	15-Aug	15-Sep	15-Oct
1 Dissatisfied	Count	15	19	14	21	13	14	19	9	15	14
	% within ContactDate	2.6%	3.3%	2.4%	3.6%	2.2%	2.4%	3.2%	1.5%	2.5%	2.4%
2	Count	6	3	1	7	6	3	7	3	3	3
	% within ContactDate	1.0%	0.5%	0.2%	1.2%	1.0%	0.5%	1.2%	0.5%	0.5%	0.5%
3	Count	5	8	4	7	8	7	3	2	3	5
	% within ContactDate	0.9%	1.4%	0.7%	1.2%	1.4%	1.2%	0.5%	0.3%	0.5%	0.9%
4	Count	10	2	5	6	3	4	4	7	7	8
	% within ContactDate	1.7%	0.3%	0.8%	1.0%	0.5%	0.7%	0.7%	1.2%	1.2%	1.4%
5	Count	17	27	23	36	19	22	24	22	27	22
	% within ContactDate	2.9%	4.6%	3.9%	6.2%	3.2%	3.7%	4.0%	3.7%	4.6%	3.7%
6	Count	8	27	14	11	9	17	10	8	7	11
	% within ContactDate	1.4%	4.6%	2.4%	1.9%	1.5%	2.9%	1.7%	1.4%	1.2%	1.9%
7	Count	30	34	36	33	32	36	41	41	47	40
	% within ContactDate	5.1%	5.8%	6.1%	5.6%	5.4%	6.1%	6.9%	6.9%	8.0%	6.8%
8	Count	86	74	100	78	76	75	88	81	91	75
	% within ContactDate	14.7%	12.7%	16.9%	13.3%	12.9%	12.7%	14.8%	13.7%	15.4%	12.8%
9	Count	47	82	67	79	62	72	80	75	80	64
	% within ContactDate	8.0%	14.0%	11.4%	13.5%	10.5%	12.2%	13.5%	12.7%	13.5%	10.9%
10 Satisfied	Count	360	308	326	307	363	342	317	343	311	345
	% within ContactDate	61.6%	52.7%	55.3%	52.5%	61.4%	57.8%	53.5%	58.0%	52.6%	58.8%
Total	Count	584	584	590	585	591	592	593	591	591	587
	Top 3 Box	**84.4%**	**79.5%**	**83.6%**	**79.3%**	**84.8%**	**82.6%**	**81.8%**	**84.4%**	**81.6%**	**82.5%**

Q28. Overall how

	15-Nov	15-Dec	**Total 2015**	16-Jan	16-Feb	16-Mar	16-Apr	16-May	16-Jun	16-Jul	16-Aug	16-Sep
1 Dissatisfied	10	18	**181**	12	17	16	15	10	17	20	10	14
	1.7%	3.1%	**2.6%**	2.0%	2.9%	2.7%	2.5%	1.7%	2.8%	3.3%	1.7%	2.4%
2	3	6	**51**	4	4	2	3	3	6	3	3	4
	0.5%	1.0%	**0.7%**	0.7%	0.7%	0.3%	0.5%	0.5%	1.0%	0.5%	0.5%	0.7%
3	7	1	**60**	11	6	3	5	4	4	6	4	11
	1.2%	0.2%	**0.8%**	1.8%	1.0%	0.5%	0.8%	0.7%	0.7%	1.0%	0.7%	1.9%
4	3	2	**61**	5	3	11	4	4	8	7	10	8
	0.5%	0.3%	**0.9%**	0.8%	0.5%	1.8%	0.7%	0.7%	1.3%	1.2%	1.7%	1.3%
5	24	25	**288**	26	29	31	27	27	26	24	23	20
	4.1%	4.3%	**4.1%**	4.4%	4.9%	5.2%	4.5%	4.5%	4.3%	4.0%	3.9%	3.4%
6	6	6	**134**	14	18	8	13	7	13	13	9	22
	1.0%	1.0%	**1.9%**	2.3%	3.1%	1.3%	2.2%	1.2%	2.2%	2.2%	1.5%	3.7%
7	31	23	**424**	30	28	29	30	36	31	22	32	35
	5.3%	3.9%	**6.0%**	5.0%	4.7%	4.8%	5.0%	6.1%	5.2%	3.7%	5.4%	5.9%
8	97	89	**1010**	86	91	81	78	65	79	72	88	82
	16.5%	15.2%	**14.3%**	14.4%	15.4%	13.5%	13.0%	10.9%	13.2%	12.0%	14.8%	13.8%
9	76	68	**852**	75	74	71	55	76	68	74	62	69
	12.9%	11.6%	**12.1%**	12.6%	12.5%	11.9%	9.2%	12.8%	11.4%	12.4%	10.4%	11.6%
10 Satisfied	332	349	**4003**	334	320	346	368	363	347	357	355	329
	56.4%	59.5%	**56.7%**	55.9%	54.2%	57.9%	61.5%	61.0%	57.9%	59.7%	59.6%	55.4%
Total	589	587	**7064**	597	590	598	598	595	599	598	596	594
	85.7%	**86.2%**	**83.0%**	**82.9%**	**82.2%**	**83.3%**	**83.8%**	**84.7%**	**82.5%**	**84.1%**	**84.7%**	**80.8%**

Q28. Overall how

	16-Oct	16-Nov	16-Dec	**Total 2016**	17-Jan	17-Feb	17-Mar	17-Apr	17-May	17-Jun	17-Jul	17-Aug
1 Dissatisfied	11	19	21	**182**	14	14	11	23	11	18	18	13
	1.8%	3.2%	3.5%	**2.5%**	2.4%	2.4%	1.9%	3.9%	1.8%	3.0%	3.0%	2.2%
2	6	4	3	**45**	6	3	5	7	7	4	4	10
	1.0%	0.7%	0.5%	**0.6%**	1.0%	0.5%	0.8%	1.2%	1.2%	0.7%	0.7%	1.7%
3	7	3	8	**72**	5	8	4	6	9	3	4	4
	1.2%	0.5%	1.3%	**1.0%**	0.9%	1.3%	0.7%	1.0%	1.5%	0.5%	0.7%	0.7%
4	5	5	4	**74**	6	8	7	4	5	6	5	8
	0.8%	0.8%	0.7%	**1.0%**	1.0%	1.3%	1.2%	0.7%	0.8%	1.0%	0.8%	1.3%
5	29	16	30	**308**	30	23	21	26	29	26	30	26
	4.9%	2.7%	5.1%	**4.3%**	5.1%	3.9%	3.5%	4.4%	4.9%	4.4%	5.1%	4.3%
6	11	10	10	**148**	17	15	10	14	13	6	7	17
	1.8%	1.7%	1.7%	**2.1%**	2.9%	2.5%	1.7%	2.4%	2.2%	1.0%	1.2%	2.8%
7	29	24	16	**342**	29	43	28	36	38	29	30	40
	4.9%	4.0%	2.7%	**4.8%**	4.9%	7.2%	4.7%	6.1%	6.4%	4.9%	5.1%	6.7%
8	66	86	70	**944**	79	80	73	82	77	67	84	87
	11.1%	14.4%	11.8%	**13.2%**	13.4%	13.4%	12.3%	13.8%	12.9%	11.3%	14.1%	14.5%
9	82	61	61	**828**	55	65	76	68	72	61	68	58
	13.7%	10.2%	10.3%	**11.6%**	9.4%	10.9%	12.8%	11.4%	12.1%	10.3%	11.4%	9.7%
10 Satisfied	351	368	370	**4208**	347	336	359	328	336	371	344	335
	58.8%	61.7%	62.4%	**58.8%**	59.0%	56.5%	60.4%	55.2%	56.3%	62.8%	57.9%	56.0%
Total	597	596	593	**7151**	588	595	594	594	597	591	594	598
	83.6%	**86.4%**	**84.5%**	**83.6%**	**81.8%**	**80.8%**	**85.5%**	**80.5%**	**81.2%**	**84.4%**	**83.5%**	**80.3%**

Q28. Overall how

	17-Sep	17-Oct	17-Nov	17-Dec	**Total 2017**	18-Jan	18-Feb	18-Mar	18-Apr	18-May	18-Jun	18-Jul
1 Dissatisfied	15	21	15	15	**188**	20	20	16	14	10	16	10
	2.5%	3.5%	2.5%	2.5%	**2.6%**	3.4%	3.4%	2.7%	2.3%	1.7%	2.7%	1.7%
2	5	7	2	5	**65**	5	4	4	2	5	4	3
	0.8%	1.2%	0.3%	0.8%	**0.9%**	0.8%	0.7%	0.7%	0.3%	0.8%	0.7%	0.5%
3	6	5	5	5	**64**	7	9	6	2	3	5	8
	1.0%	0.8%	0.8%	0.8%	**0.9%**	1.2%	1.5%	1.0%	0.3%	0.5%	0.8%	1.3%
4	4	6	1	3	**63**	4	6	2	2	6	4	4
	0.7%	1.0%	0.2%	0.5%	**0.9%**	0.7%	1.0%	0.3%	0.3%	1.0%	0.7%	0.7%
5	39	23	28	20	**321**	24	23	33	26	19	35	17
	6.5%	3.9%	4.7%	3.4%	**4.5%**	4.0%	3.9%	5.5%	4.4%	3.2%	5.9%	2.8%
6	11	9	17	12	**148**	9	11	17	13	13	15	14
	1.8%	1.5%	2.9%	2.0%	**2.1%**	1.5%	1.9%	2.9%	2.2%	2.2%	2.5%	2.3%
7	33	30	29	38	**403**	31	37	42	30	28	30	38
	5.5%	5.1%	4.9%	6.4%	**5.7%**	5.2%	6.3%	7.0%	5.0%	4.7%	5.0%	6.4%
8	79	65	85	67	**925**	67	78	65	84	65	65	73
	13.2%	10.9%	14.3%	11.3%	**13.0%**	11.3%	13.2%	10.9%	14.1%	11.0%	10.9%	12.2%
9	60	65	68	74	**790**	53	70	63	68	59	66	70
	10.1%	10.9%	11.4%	12.5%	**11.1%**	8.9%	11.8%	10.6%	11.4%	9.9%	11.0%	11.7%
10 Satisfied	345	363	344	355	**4163**	374	334	348	356	385	358	360
	57.8%	61.1%	57.9%	59.8%	**58.4%**	63.0%	56.4%	58.4%	59.6%	64.9%	59.9%	60.3%
Total	597	594	594	594	**7130**	594	592	596	597	593	598	597
	81.1%	**83.0%**	**83.7%**	**83.5%**	**82.4%**	**83.2%**	**81.4%**	**79.9%**	**85.1%**	**85.8%**	**81.8%**	**84.3%**

Q28. Overall how

	18-Aug	18-Sep	18-Oct	18-Nov	18-Dec	**Total 2018**	19-Jan	19-Feb	19-Mar	19-Apr	19-May	19-Jun
1 Dissatisfied	10	17	13	16	16	**178**	11	10	16	23	9	17
	1.7%	2.9%	2.2%	2.7%	2.7%	**2.5%**	1.8%	1.7%	2.7%	3.9%	1.5%	2.8%
2	2	3	4	5	5	**46**	8	3	3	5	2	8
	0.3%	0.5%	0.7%	0.8%	0.8%	**0.6%**	1.3%	0.5%	0.5%	0.8%	0.3%	1.3%
3	4	4	7	5	1	**61**	6	4	4	4	5	3
	0.7%	0.7%	1.2%	0.8%	0.2%	**0.9%**	1.0%	0.7%	0.7%	0.7%	0.8%	0.5%
4	6	4	5	4	7	**54**	5	7	11	4	3	8
	1.0%	0.7%	0.8%	0.7%	1.2%	**0.8%**	0.8%	1.2%	1.8%	0.7%	0.5%	1.3%
5	27	22	19	24	22	**291**	26	30	33	37	19	18
	4.5%	3.7%	3.2%	4.0%	3.7%	**4.1%**	4.4%	5.1%	5.5%	6.2%	3.2%	3.0%
6	10	15	14	6	15	**152**	9	9	12	16	15	11
	1.7%	2.5%	2.4%	1.0%	2.5%	**2.1%**	1.5%	1.5%	2.0%	2.7%	2.5%	1.8%
7	30	27	32	26	30	**381**	24	33	39	35	33	43
	5.0%	4.6%	5.4%	4.3%	5.0%	**5.3%**	4.0%	5.6%	6.5%	5.9%	5.5%	7.1%
8	79	59	55	75	82	**847**	69	60	82	71	78	66
	13.2%	10.0%	9.2%	12.5%	13.7%	**11.9%**	11.6%	10.1%	13.7%	11.9%	13.1%	10.9%
9	66	75	78	67	66	**801**	69	67	67	65	64	82
	11.1%	12.7%	13.1%	11.2%	11.0%	**11.2%**	11.6%	11.3%	11.2%	10.9%	10.8%	13.5%
10 Satisfied	363	364	368	371	354	**4335**	369	370	333	335	367	351
	60.8%	61.7%	61.8%	61.9%	59.2%	**60.7%**	61.9%	62.4%	55.5%	56.3%	61.7%	57.8%
Total	597	590	595	599	598	**7146**	596	593	600	595	595	607
	85.1%	**84.4%**	**84.2%**	**85.6%**	**83.9%**	**83.7%**	**85.1%**	**83.8%**	**80.3%**	**79.2%**	**85.5%**	**82.2%**

Q28. Overall how

	19-Jul	19-Aug	19-Sep	19-Oct	19-Nov	19-Dec	**Total 2019**
1 Dissatisfied	10	20	14	12	10	6	**158**
	1.7%	3.4%	2.3%	2.0%	1.7%	1.0%	**2.2%**
2	5	8	3	4	7	5	**61**
	0.8%	1.3%	0.5%	0.7%	1.2%	0.8%	**0.9%**
3	6	10	2	7	4	9	**64**
	1.0%	1.7%	0.3%	1.2%	0.7%	1.5%	**0.9%**
4	4	5	4	7	6	6	**70**
	0.7%	0.8%	0.7%	1.2%	1.0%	1.0%	**1.0%**
5	21	20	23	22	19	20	**288**
	3.5%	3.4%	3.8%	3.7%	3.2%	3.4%	**4.0%**
6	11	12	13	7	9	11	**135**
	1.8%	2.0%	2.2%	1.2%	1.5%	1.8%	**1.9%**
7	34	29	27	31	26	29	**383**
	5.7%	4.9%	4.5%	5.2%	4.4%	4.9%	**5.4%**
8	76	62	82	85	65	64	**860**
	12.7%	10.4%	13.7%	14.4%	11.0%	10.7%	**12.0%**
9	60	75	66	70	84	82	**851**
	10.0%	12.6%	11.0%	11.8%	14.2%	13.8%	**11.9%**
10 Satisfied	372	354	364	347	362	364	**4288**
	62.1%	59.5%	60.9%	58.6%	61.1%	61.1%	**59.9%**
Total	599	595	598	592	592	596	**7158**
	84.8%	**82.5%**	**85.6%**	**84.8%**	**86.3%**	**85.6%**	**83.8%**

Date of Request: August 14, 2020 Request No. DPS-327 SUPPLEMENTAL
Due Date: August 28, 2020 NMPC Req. No. NM -361 SUPPLEMENTAL

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Kayla Whitaker

TO: National Grid, Shared Services Panel

SUBJECT: Service Quality Assurance Program - Customer Service

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. For each of the last five years (2015, 2016, 2017, 2018, and 2019), provide the granular data that was used to calculate the Customer Service Quality Assurance Program (CSQAP) metric results shown in Exhibit__(SSP-6), including formulas used to calculate the annual performance results for each metric.

2. For each of the last five years (2015, 2016, 2017, 2018, and 2019), provide the following:

   a. The total number of residential customer transaction satisfaction surveys sent.

   b. The total number of residential customer transaction satisfaction surveys answered and returned to Company.

   c. A breakout of all scores for the residential customer transaction satisfaction survey.

3. Indicate the confidence level or margin of error for the Company's residential customer transaction satisfaction survey mechanism.

4. Does the Company utilize weighted averages when determining the percentages/totals for any monthly submitted Customer Service Performance Indicator (CSPI) reports or for the annually submitted Customer Service Quality Assurance Program (CSQAP) metrics?

   a. If yes, provide a list of all CSPI and CSQAP metrics that are calculated using a weighted average.

b. If the Company utilizes weighted averages, provide a detailed description of when this process first began within the Company's procedures. Include any supporting documents.

c. If the Company utilizes weighted averages, provide a detailed explanation of how the Company calculates this weighted average for the CSPI and CSQAP reports and include all supporting workpapers for the years from 2015 to 2019s.

Response:

This supplemental response answers the question posed in 2a.

2a. The total number of residential customer transaction satisfaction surveys sent.

	2015*	Apr – Dec 2016*	2017	2018	2019
Number of Customers Dialed for Residential Customer Transaction Satisfaction Survey	N/A	126,404	155,530	157,780	215,053

*Data prior to April 2016 is not available as the study was transitioned to the current vendor at that time.

Name of Respondent: Date of Reply:
Christina Steiner August 28, 2020

Date of Request: August 14, 2020 Request No. DPS-330
Due Date: August 24, 2020 NMPC Req. No. NM -364

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Chelsea Kruger and Kayla Whitaker

TO: National Grid, Shared Services Panel

SUBJECT: Customer Information System

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. Provide all sanctions papers for the CIS replacement.

2. Explain whether management for NMPC have approved this project. If so, provide documentation of such approval. If not, explain why not.

3. What additional approvals are necessary at NMPC, National Grid Service Company, National Grid USA, or other affiliates for the CIS replacement? Identify any that have already been granted and provide documentation. For any that have not yet been granted, explain why not, and describe what process remains for such approvals, including a timeline.

Response:

1. Please see Attachment 1 for the CIS Sanction Paper.

2. On January 27, 2020, National Grid's Senior Executive Steering Committee ("SESC") endorsed the plan to proceed with the first two phases of the program: Pre-Project Framing and Enterprise Design. As shown on page 19 of Attachment 1, the SESC noted a potential full investment of $562.438 million contingent upon approval of a Project Sanction Paper following completion of these first two phases. The Pre-Project Framing phase was completed in June 2020.

3. Approval by the National Grid plc Executive team is necessary for the program to proceed. The Pre-Project Framing phase was essential in creating an overall blueprint and roadmap to achieve desired business outcomes and customer needs. It also defined

the need for certain technical architecture documentation that will be completed prior to proceeding with the program.

The current timeline plans ramp-up activities to begin in July 2021, and program start in January 2022. These dates are critical to achieve the in-service dates provided in the direct testimony of the Company's Shared Services Panel. Approval by the National Grid plc Executive team must be received prior to ramp-up.

Name of Respondent: Date of Reply:
Jeffrey P. Martin August 24, 2020

nationalgrid

Long: US Sanction Paper

Title:	Comprehensive CIS solution in support of Customer Transformation	Sanction Paper #:	USSC-19-063
Project #: Capex #: Internal Order #:	INVP 5503A S008147	Sanction Type:	Partial Sanction
Operating Company:	National Grid USA Svc. Co.	Date of Request:	1/27/2020
Author:	Patel, Tejal	Sponsor(s):	Knight, Gregg Chief Customer Officer
Utility Service:	IT	Project Manager:	Daly, Orla

Executive Summary

This paper requests Partial Sanction of INVP 5503A in the amount of $70.196M with a tolerance of +/-10% for the purposes of Pre-Project Framing and Enterprise Design in accordance with the program's business case plan.

This sanction amount is $70.196M broken down into:

- $46.706M Capex
- $23.490M Opex
- $0.000M Removal

NOTE the potential investment of $562.438M with a tolerance of +/-15%, contingent upon submittal and approval of a Project Sanction paper following completion of Pre-Project Framing and Enterprise Design in accordance with the program's business case plan.

Project Summary

The transformation of National Grid's key customer processes, systems, and capabilities is critical to create an improved future-state customer experience and satisfaction. It delivers operational efficiencies, satisfies regulatory goals, and eliminates pervasive pain points such as the lack of a single, consistent, and modern invoice. Through this transformation, replacement of the company's Customer Information Systems (CIS) as described in the business case and detailed financial model, enables us to deliver on customer expectations with greater efficiency, reliability, scalability and extensibility for future products and services. Specific business, delivery, operation, and financial risks are described in this paper's "Drivers" section.

Background

Evolving customer expectations demand a significantly enhanced technology platform designed to meet the information needs of customers in the current (and future) environment and one that supports policy goals related to improved customer choice, deployment of advanced metering technologies and increased reliance on distributed energy resources.

The case for change is driven by the Company's need to deliver an improved future-state customer experience and satisfaction, address significant pain points such as the high cost of change, increase flexibility needed to deploy customer programs, and eliminate manual processes and controls duplicated

across legacy platforms. Digital and emerging technologies as well as progressive rate design are increasingly complex to manage in current systems.

Replacement of key business and billing functions with the proposed Customer Information System (CIS) solution will provide a multitude of benefits, including enabling National Grid to more effectively implement new customer programs and rate options, and providing customers with a significantly improved, customer-centric service experience. Modernization of National Grid's legacy systems will transform the business and thereby elevate the service and support customers receive.

Initiating the transition to a modern CIS platform must begin in the near term given the current state of the legacy systems and the timeline required for the replacement.

Customer Centricity:
- Need a single, integrated customer data model and improved analytics capability in order to understand customer needs
- Need to achieve a 360-degree view of each customer and all related activity, with optimized customer interactions, personalization, and proactive notifications through preferred channels
- Need greater agility to develop and deliver new personalized customer programs, services, and rate designs
- Need ability to grow the portfolio of products and services that meet the most important customer needs

Technology, Systems, and Tools:
- Of 20 tier 1 North American utilities, National Grid is one of three operating a CIS over 30 years old
- Technology obsolescence, complex functions, and hundreds of integrations (duplicated across two systems) make the legacy CIS susceptible to increased errors and downtime
- Increasing operating costs of two legacy CIS systems
- Inability to deliver complex rate design and programs that meet evolving customer expectations
- Unable to process transactions in real-time, 24/7/365
- Lack of configuration capability results in higher manual billing
- Process controls duplicated, many of which are detective (post) rather than preventative (pre)

Organizational Capabilities:
- Legacy technologies and skillsets are largely unsupported and difficult to find
- High cost of change and lack of flexibility requires a significant amount of manual processes
- Spending funds supporting outdated technology instead of investing in the future

Project Description

This overall program is a multi-year journey transforming customer processes, creating new capabilities, replacing legacy systems, and integrating to all other customer domain initiatives.

To ensure capabilities and process optimizations are embedded into customer domain initiatives, a "Pre-Project Framing and Requirements" study will be conducted. This study will define the future state customer experience through Business Architecture, Step Change and Process Optimization, and Technology required to deliver that experience. This study will shape future phases of all customer domain projects and initiatives (CIS, CXP, AMI, ADMS, CRM, AIMS, Digital).

Pre-Project Framing and Requirements:
To ensure that the business architecture for CIS will have a direct tie to the broader customer transformation objectives, the following objectives should be met:
- Define future-state customer experience.
- Identify as part of the high-level journey maps, the connection with capabilities, systems, processes and people. Also identify the data use cases required to deliver the journeys.
- Establish a business architecture connecting customer domain projects and initiatives with the future-state customer experience
- Identify gaps against ideal future-state and step-changes necessary to accelerate or remediate customer pain points
- Determine the process(es), systems, and people changes involved in the business areas that require step-changes

- Develop the roadmap, high-level technical and data architecture
- Define approach to the S/4 data model (Customer and Finance) and data hub with primary use cases

Enterprise Design:

- Final Confirmation of Scope
- Mobilization and Training of Core Team
- Planning for Design and Configuration Sprints
- Agile and Delivery Methodology Training
- SAP Customer Relationship & Billing (CR&B) Training
- Additional training to project team on Hybrid Agile methods, governance, implementation plan, tools and design thinking
- Method and Tools Adoption Workshop
- Pre-Assembly demos using Software Integrator (SI) accelerators and SAP Model Office
- Process Validation – Confirm business processes against Pre-Assembly model ("Adopt" processes)
- Enterprise Design – prepare common design attributes of all three project releases (see release plan in complementary presentation covering all 10 operating companies)
  - Gap Resolution (change required to "off the shelf" system)
  - Design Confirmation (back to business need)
  - Application security and data privacy & protection
- Baseline Configuration
- Security

Solution Strategy:

The proposed program to replace National Grid's Customer Information System (CIS) infrastructure will include the following activities:

- Implement core CIS functions on future state platform for all customer types and jurisdictions
- Integrate the core CIS platform with the retained systems and vendors
- Integrate the core CIS with the CXP, GBE, Advanced Metering Infrastructure (AMI), Grid Modernization and other project solutions where needed
- Align to the S/4 team's delivery of a new code block thus avoiding integration rework
- Enhance / extend the Customer Relationship Management (CRM) application for functionality that is enabled by the new core CIS where needed
- Align to Infrastructure, Operations, and Security Strategies

Development and Implementation Strategies:

The development strategy uses a hybrid agile approach, whereby business and IT teams work more collaboratively in short-cycle sprints to prioritize functionality and get to a minimum viable product (MVP). This approach provides benefits over a traditional "waterfall" delivery method, such as stakeholder engagement, transparency, focus on business value and users. Throughout the development lifecycle, employ testing methods to validate MVP functions including: unit testing, sprint testing, integration testing, user acceptance testing, stress testing, and parallel testing. Use automation tools and techniques to increase speed, accuracy, and variation of test cases.

The implementation strategy is to utilize a multiple release approach designed to mitigate risk. The highest risk legacy platform serving gas-only companies (CRIS) is retired first. The strategy assures that no more than two systems are operating simultaneously.

Lessons from previous programs have been incorporated into CIS planning phases and will continue throughout the program. National Grid's Golden Rules and Critical Success Factors have also been embedded into the CIS program.

The program will employ a formal Organization Change Management (OCM) discipline. The OCM team will engage stakeholders early to understand impacts and build awareness and support. The OCM team will:

- develop impact assessments to processes and organizations,
- develop and deliver appropriate communications,
- develop, deliver, and assess training,
- conduct business readiness assessments,
- formally log change items.

When the CIS Program has been implemented the following will be indicators of success:

- Delivery of all capabilities in the Business Architecture(for the CIS program) enabling the desired Future State Customer Experience. This Business Architecture will be developed in the Pre-project Framing and Requirements Statement of Work.
- National Grid delivering lower cost revenue cycle services (meter reading, billing, credit and collections, payments) while being able to grow and flex with customer, business and regulator emerging needs (e.g. new products and services), Distributed Generation, Energy Efficiency, and Demand Response programs
- The new CIS allowing employees to deliver revenue cycle services with fewer exceptions or manual workarounds to customers, getting it right the first time.

Summary of Benefits

	Release 1 Recurring Annual Benefits	Release 2 Recurring Annual Benefits*	Release 3 Recurring Annual Benefits*
Type 1 Benefits - Measurable			
Implementation of the new CIS will result in a direct, quantifiable financial benefit (cost reduction, revenue growth, cash flow, or profit)	$ 3,097,152	$ 6,783,590	$ 8,610,438
Type 2 Benefits - Operational*			
Implementation of the new CIS will directly create a significant improvement in process, productivity, quality, cost control/avoidance, controls environment, or operations (business or technical). This improvement however does not directly create a type 1 benefit	$ 2,837,705	$ 4,705,442	$ 6,247,400
Type 3 Benefits - Indirect or Intangible*			
Implementation of the new CIS indirectly enables a type 1 or type 2 benefit, creates customer / employee satisfaction, or improves the company's brand reputation / regulator position	$ 209,757	$ 364,100	$ 532,000
Total	$ 6,144,614	$ 11,853,132	$ 15,389,838

*Type 2 and Type 3 Benefits with a monetary value associated are only achieved by meeting the conditions described in each benefit within the CIS Program Benefits Model.
*aggregate

More Details in the Appendix.

A formal Organization Change Management (OCM) discipline as described in the above Development and Implementation Strategy will ensure business and customer needs are addressed. The plan includes elements of change development, execution and readiness.

Drivers:

Specific systemic and infrastructure challenges are the drivers and have been identified as follows:

Business Risk:
A significant digital consumer technology revolution is underway and presents both challenges and opportunities for the utility industry. The rapid pace of change is accelerating market convergence, reducing barriers for new market entrants, driving down the cost of product innovation, and increasing the speed at which consumers adopt new technologies. Smart and distributed technologies, such as home energy management, solar, electric vehicle, storage, mobile applications, and data-driven products & services are coming to market and evolving quickly. Such drivers and emerging offerings in Distributed Generation, Retail Choice, and EV require business agility to bring them to market and quickly operationalize in a manner that currently is not achievable due to the current infrastructure.

Delivery Risk:
National Grid's legacy customer systems have become less stable and less reliable. This is largely due to a diminished set of skills and experience operating, supporting, and modifying multiple, complex, non-configurable systems. This condition is further aggravated by an increasing pace of change from business and regulatory demands. Also contributing to the instability is the number and complexity of integrations between the legacy CIS systems and subsystems that have been added over two decades as the energy market, regulatory requirements and customer-utility relationship have transformed. Current customer systems are increasingly difficult to adapt to meet the needs of the new digitally equipped customer and to meet regulatory and company demands that they were never prepared to serve, such as new products and services, virtual net metering, etc.

Operational Risk:
Technologies and skillsets required by current systems are obsolete and extremely difficult to find in the current market due to continued resource loss. In addition, there is a wide range of system-driven operational and technology pain points. For example, due to system and technical resource limitations, business areas are required to perform highly- manual processes to deliver Distributed Generation requirements. A lack of business configurable self-service capabilities drives significant dependence on IT for simple business rule and configuration value changes creating unnecessary lags in deploying such changes (e.g. rate changes).

Financial Risk:
Innovative rate plans, increase in ESCO's (400 currently), heightened customer expectations, environmental pressures and new technologies driving change within the industry are all placing increasing demands on our legacy systems. Prolonged interruptions to systems could have significant customer service and revenue implications, exposing the company to fines and penalties from regulators as these systems bill 6.7 million customer accounts monthly, and around $13.3 billion annually across 10 operating companies.

Alternatives

Number	*Title*
1	

Alternative 1: Do Nothing
Current operations are adversely impacted on a routine basis by outages experienced in the legacy CRIS and CSS systems. This has a negative impact on customer service and customer satisfaction and does not support National Grid's objective to improve satisfaction. Another disadvantage of doing nothing is the inability to respond timely and complete programming updates to reflect new rate and tariff changes in customer bills. This is viewed negatively by both the regulator and customer, and this would be improved with the replacement of a new CIS system.

Rejected: Doing nothing is not an acceptable option, as delaying and prolonging the inevitable need to replace the current systems, which are nearing obsolescence and no longer able to provide reliable service, will only cause further exposure to operational failure, customer dissatisfaction, and risk regulatory noncompliance.

2 Alternative 2: Minimum Cost Alternative - Consolidate Legacy Systems
This alternative was attempted in 2015 in "INVP 2583 CRIS Migration," which looked at migrating CRIS to CSS. Upon completion of the Requirements and Design phase of that project, the Company began an extensive review to validate the approach, timing and strategic priorities of the initiative and others in the customer space.

Rejected: The recommendation of the study was for the Company to pursue other strategic priorities, including the acquisition of a new customer information system. The team agreed that continuing to run the CRIS and CSS systems was not sustainable due to technology obsolescence and lack of support, relevant skillsets difficult to find, and the need for greater agility to develop and deliver new personalized customer programs, services, and rate designs. The company took a write-down of the expense already put into the CRIS consolidation and began developing a new CIS strategy in 2017.

Indicative cost $77.784M with a tolerance of +/-25% based on 2015 analysis (INVP 2583 CRIS Migration). Run the business costs would only be reduced by $1.8m and there would be around $6.8m of annual benefits foregone.

3 Alternative 3: Outsourcing / Insourcing

Business Services handles the meter to cash work streams which have a direct impact on the Company's bottom line. These are key touchpoints with customers that involve both complex and sensitive issues. Being able to provide these services in an efficient, reliable and cost-effective manner is imperative and fundamental to utility services. There may be a case for outsourcing some parts of the business services process, but this would only be feasible if the processes and systems that are critical to the successful execution of this work were in place and had matured to a point where transactions could be outsourced in a seamless way, without adverse impact to customers or increased risk. Revenue cycle is closely monitored by the regulators, and National Grid must meet key quality of service measures that are in place for billing, payment processing and credit and collections.

Rejected: The Business Services team has already examined and implemented outsourcing of many highly structured services such as Bill Imaging, Print and Mail, Collection Agency handling, and Payments Processing. Outsourcing of these services was challenging due to differing processes across multiple legacy systems. Outsourcing of additional processes would be similarly complicated due to these challenges. Replacement of legacy systems with a single and consistent solution (which is the subject of this overall investment) is necessary to improve operations and customer experience regardless of whether the services are insourced and outsourced.

Related Projects, Scoring and Budget

Summary of Projects

Project Number	*Project Type* (Elec only)	*Project Title*	*Estimate Amount($M)*

5503A		Comprehensive CIS solution in support of Customer Transformation	562.438
		Total:	562.438

Associated Projects

Project Number	*Project Title*	*Estimate Amount ($M)*
5503B	S4 Business Transformation	522.472
4572	Gas Business Enablement	535.669
		1,058.141

Prior Sanctioning History - N/A

Key Milestones

Milestone	*Date (Month / Year)*
PLc Executive Submittal	March, 2020
Partial Sanction Pre-project Framing and Enterprise Design	April, 2020
Partial Sanction Release (R1)	May, 2021
Begin Requirements and Design (R1)	August, 2021
Begin Development and Implementation (R1)	September, 2021
Begin User Acceptance Testing (R1)	January, 2022
Partial Sanction Release 2 (R2)	October, 2022
Move to Production / Go Live Release 1	March, 2023
Begin Requirement and Design (R2)	January, 2023
Begin Development and Implementation (R2)	February, 2023
Begin User Acceptance Testing (R2)	June, 2023
Sanction Release 3 (R3)	November, 2024
Move to Production / Go Live Release 2	April, 2025
Begin Requirement and Design (R3)	February, 2025
Begin Development and Implementation (R3)	March, 2025
Begin User Acceptance Testing (R3)	July, 2025
Move to Production / Go Live Release 3	April, 2027
Project Closure	June, 2028

Next Planned Sanction

Date (Month/Year)	Purpose of Sanction Review
May, 2021	Partial Sanction

Category

Category	Reference to Mandate, Policy, or NPV
○ Mandatory	IT BMS Standard #3:

◉ Policy-Driven
○ Justified NPV

RUN: Operate and Maintain
The management of IT assets and services is the coordinated capability to make lifecycle cost, risk, and performance decisions in order to create value for National Grid. It is essential for delivering safe, efficient and reliable performance in each of the business entities and functions. A common and strategic approach to the operational management of IT assets and services enables the most important asset management issues and opportunities to be addressed.

Asset Management Risk Score: 49

PRIMARY RISK SCORE DRIVER

◉ Reliability ○ Environment ○ Health & Safety ○ Not Policy Driven

Complexity Level: 33

◉ High Complexity ○ Medium Complexity ○ Low Complexity ○ N/A

Process Hazard Assessment

A Process Hazard Assessment (PHA) is required for this project: ○ Yes ◉ No

Current Planning Horizon

		Current Planning Horizon						
$M	Prior Yrs	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
CapEx	0.000	0.476	29.969	59.806	69.755	55.618	151.374	366.998
OpEx	0.000	0.586	14.664	27.067	32.570	23.611	76.530	175.028
Removal	0.000	0.000	0.000	0.000	0.000	5.103	15.309	20.412
Total	0.000	1.062	44.633	86.873	102.325	84.332	243.213	562.438

Resources, Operations, & Procurement

RESOURCE SOURCING

Engineering & design Resources to be provided	☑ Internal	☑ Contractor
Construction/Implementation Resources to be provided	☑ Internal	☑ Contractor

RESOURCE DELIVERY

Availability of internal resources to delivery project:	○ Red	◉ Amber	○ Green
Availability of external resources to delivery project:	○ Red	◉ Amber	○ Green

OPERATIONAL IMPACT

Outage impact on network system	○ Red	○ Amber	◉ Green

PROCUREMENT IMPACT

Procurement impact on network system:	○ Red	○ Amber	◉ Green

Key Issues - N/A

Net Zero

Contribution to National Grid's 2050 80% emissions reduction target:	◉ Neutral	○ Positive	○ Negative
Impact on adaptability of network for future climate change:	◉ Neutral	○ Positive	○ Negative
Qualifies for Green Financing:	○ Yes	○ No	◉ N/A

List References

N/A

Permitting

N/A

Investment Recovery and Customer Impact

Investment Recovery

Recovery will occur at the time of the next rate case for any operating company receiving allocations of these costs.

Customer Impact

N/A

Execution Risk Appraisal

Risk Breakdown Structure Category	Qualitative Assessment / Risk Response Strategy					Risk Scor
	Risk ID + Title	IF Statement	THEN Statement	Risk Response Strategy		
13. Project Management	R1 - Pre Project	Project does not align with other customer domain projects nor align with future state customer goals	Customer domain programs do not deliver compatible or complete capabilities and future customer state is not achieved	Avoid	Conduct pre-project framing and requirements study to define the future state customer experience, business architecture, and technology required to deliver the solution.	25
		Project staffing will need be at planned	Without the planned		Identify specific individuals to	

13. Project Management	R2 - Pre Project	levels in order to support project activities and the associated project schedule and go-live date.	level of staffing, activities will not move at expected pace and schedule will not be met.	Avoid	project positions, reconcile will SI staffing plans and contract with third-party client side firms to fill additional roles.	25
13. Project Management	R3 - Procurement	System Integrator does not staff the project with experienced resources, specifically related to the leadership roles and project management.	This would result in missed and/or improper technical / functional components.	Avoid	During the SI evaluation, experience of the key staff members assigned to the project will be evaluated and included as part of the SI selection. Replacement of key resources will also be included as part of the commercial agreements.	25
13. Project Management	R4 - Requirements	Third party firms to fill business and IT positions as required by the SI are not established.	This will limit the System Integrator's ability to meet project deadlines.	Reduce	During procurement, once the SI of choice is selected and scope/confirmation activities are completed, the National Grid staffing requirements will have been identified and National Grid will have to assign names to the required project positions. If National Grid is unable to staff various project positions it will need to pursue additional staff from third party firms. This will require a procurement effort which will need to occur in a timely manner in order to be ready for project start-up and during the	25

					project.	
13. Project Management	R5 - Pre-Project	A Project Management Office experienced in complex program delivery is not established.	This would result in missed goals function-related and budget-related. Stakeholders may lose confidence in program's ability to meet goals.	Avoid	A project management office is part of project scope. Staffing of the program management office is part of the procurement process and will be coordinated with National Grid pre-project resourcing efforts.	25
6. Real Estate	R6 - Pre-Project	The team does not have effective physical project workspace available either as co-located or at multiple locations.	As a result, the team is unable to operate, communicate, and collaborate effectively.	Reduce	Primary project participants from the SI/SW and National Grid will be co-located in a central project location and virtualization solution has been deployed.	25
13. Project Management	R7 - Project	National Grid endeavors to combine services of a Salesforce CRM with the SAP CIS (CR&B). This combination has not yet been widely deployed.	The lack of a proven blueprint from other utilities to model against may result in delays, change orders, budget issues, resource problems and project modifications.	Accept	Procurement process has identified known capabilities for the project and validated these with the software vendor SAP and the SI with their background and experiences. Lessons learned from GBE will be acted upon and internal integration team will thoroughly detail, direct, implement and oversee project.	25
7. Procurement Contracts	R8 - Procurement	SAP CR&B license negotiating and contracting schedule is yet to be established.	This could result in the lack of appropriate software and services in place for the project.	Avoid	Establish an SAP CR&B negotiation strategy and license schedule which integrates and aligns with Global negotiation	25

16. Estimating	R9 - Pre-Project	National Grid does not properly estimate the time and expense of the project within defined scope.	This could cause the company to require additional funds to cover shortfalls which may not be recoverable via rate cases.	Reduce	The initial budget was developed by a consulting firm with significant experience implementing CIS solutions for utilities. National Grid has socialized these figures and has created a financial model. There are a number of factors which need to be considered in terms of this budget, including: 1) dollars associated with taking over delivery of Salesforce capabilities to toward an actual "end state" for National Grid, 2) the impact of following an Agile based approach versus a traditional Waterfall approach to development, 3) the application of TMG's industry-wide pricing metrics to National Grids implementation dollars, which currently indicate that the financial model numbers are low. Once the SI proposals are received the financial model will be updated, and these other considerations will be addressed.	25
					Estimates for this remaining development	

1. Project Requirements	R10 - Procurement	Specific development work in Salesforce is not fully identified and budgeted.	This would result in an inaccurate scope, budget and timeline and result in the project needing to request additional to funds to deploy the comprehensive solution.	Reduce	work required to deliver expected user experience will need to be made based upon the final end state delivering in Salesforce. This will be clarified during the Pre-Project Framing and Requirements engagement.	25
13. Project Management	R11 - Procurement	The SI recommends options regarding the implementation of Salesforce using SF as system of record rather than CIS.	This violates BMS data standards and can have a negative effect on data accuracy and ultimately customer experience.	Avoid	The option to be pursued in the utilization and implementation of Salesforce/GBE, vs Salesforce/CR&B needs to be discussed and agreed to in a scoping session.	25
13. Project Management	R12 - Procurement	The System Integrator and NG do not complete and/or agree on a comprehensive joint RACI for successful project completion.	This can result in the SI blaming National Grid (or vice-versa) for shortfalls and avoiding responsibility for their own failures.	Avoid	The procurement process is driving toward making the System Integrator of Choice totally responsible for successful delivery of the Comprehensive CIS Solution as it is defined in the RFP.	25
7. Procurement Contracts	R13 - Project	ADAM contract pricing restrictions reduce the availability of qualified resources.	This can cause errors with both technical and functional deliverables. It may also cause the project to miss deadlines.	Reduce	Establish a framework that allows for a new negotiated rate card specific to project determined key skill sets	25
		Technical environment	This can cause		Technical architecture services regarding development and the management of environments is being defined	

		management is not appropriately defined and/or managed.	delays in the project, missed deadlines, and cost overruns.		during procurement and will be documented in the statement of work. This will be monitored during implementation by the PMO and QA functions.	25
1. Project Requirements	R14 - Project			Avoid		
1. Project Requirements	R15 Pre - Project	The CIS program is not filed and/or approved in rate cases in accordance with the program's regulatory recovery schedule plan.	The program could experience a delay or loss of certain recoveries due to timing or scope denial.	Reduce	Implementing a new CIS is a necessary and prudent action and the company will file for recovery in each rate plan. The program took into account the company's current filing plan at the point of modeling anticipated recovery. This risk will be continually monitored by the Transformation Office's Program Assurance sub-team. If Program Assurance becomes aware of a company direction to modify its filing plan, or a certain filing is partially or fully denied by a state regulator, it will discuss the recovery impact with Regulatory and Finance teams and make a recommendation to the program's Steering Committee. Recommended actions could include acceptance of recovery reduction, program scope and investment	25

				modification, timeline modification, or work cessation.	

Business Plan

Business Plan Name & Period (BP 18)	*Project Included in approved Business Plan?*	*(Over) / Under Business Plan*	*Project Cost relative to approved Business Plan ($M)*
IT Investment Plan FY21 - FY25	◉ Yes ○ No	○ Over ◉ Under ○ N/A	85.824

If Cost > Approved

if costs > approved Business Plan how will this be funded?

CIAC Reimbursement

N/A

Cost Summary Table

Project Number	5503A	Project Title	Comprehensive CIS solution in support of Customer Transformation	Project Estimate Level	+/- 15%			

Spend	Prior Yrs	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Capex	0.000	0.476	29.969	59.806	69.755	55.618	151.374	366.998
Opex	0.000	0.586	14.664	27.067	32.570	23.611	76.530	175.028
Removal	0.000	0.000	0.000	0.000	0.000	5.103	15.309	20.412
Total	0.000	1.062	44.633	86.873	102.325	84.332	243.213	562.438

Total Project Sanction

Capex	0.000	0.476	29.969	59.806	69.755	55.618	151.374	366.998
Opex	0.000	0.586	14.664	27.067	32.570	23.611	76.530	175.028
Removal	0.000	0.000	0.000	0.000	0.000	5.103	15.309	20.412
Total	0.000	1.062	44.633	86.873	102.325	84.332	243.213	562.438

Project Costs per Business Plan

$M	Prior Yrs	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Capex	0.000	4.499	69.636	71.411	56.948	49.166	93.604	345.264
Opex	0.000	4.140	36.032	44.072	52.386	37.641	108.312	282.583
Removal	0.000	0.000	0.000	0.000	2.552	5.103	12.760	20.415
Total Cost in Bus.								

Plan	0.000	8.639	105.668	115.483	111.886	91.910	214.676	648.262

Variance

$M	Prior Yrs	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Capex	0.000	4.023	39.667	11.605	(12.807)	(6.452)	(57.770)	(21.734)
Opex	0.000	3.554	21.368	17.005	19.816	14.030	31.782	107.555
Removal	0.000	0.000	0.000	0.000	2.552	0.000	(2.549)	0.003
Total Variance	0.000	7.577	61.035	28.610	9.561	7.578	(28.537)	85.824

Sanction Request Breakdown by Project

Project Number	Capex	Opex	Removal	Total
5503A	46.706	23.490	0.000	70.196
Total	46.706	23.490	0.000	70.196

Cost Assumptions

Original cost forecasts were developed using proprietary tools from an experienced consulting partner, and further validated by the National Grid program team and an experienced design assurance partner. These cost figures were updated as quotes from the software and system integration vendors became available. Reductions were achieved through rationalization of the resource model, stabilization staffing, and associated contingency and AFUDC. There figures will be further adjusted as final scoping and negotiation is completed.

Net Present Value / Cost Benefit Analysis

NPV Assumptions & Calculations

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	
Savings	0	0	0	0	$2	$3	$5	$7	$8	$9	
Revenue	$0	$8	$22	$36	$57	$45	$58	$60	$63	$52	
Total Tax	$0	$1	$1	($1)	($1)	$5	$2	$2	($0)	$0	
Capex Opex Spend		($2)	($44)	($82)	($97)	($80)	($81)	($66)	($64)	($20)	$0
Cash Flow	**($1)**	**($34)**	**($59)**	**($61)**	**($22)**	**($28)**	**($1)**	**$5**	**$50**	**$60**	
Discounted Cash with Benefits		($1)	($32)	($51)	($49)	($17)	($20)	($1)	$3	$28	$32
Discounted Cash without Benefits		($1)	($32)	($51)	($49)	($18)	($22)	($4)	($1)	$24	$27
Payback	($1)	($33)	($84)	($133)	($150)	($170)	($171)	($168)	($139)	($108)	
	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Total	
	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38		
Savings	$9	$9	$9	$9	$9	$9	$9	$9	$9	$110	

Revenue	$49	$46	$44	$42	$28	$26	$14	$13	$0	$665	
Total Tax	($4)	($8)	($8)	($10)	($7)	($7)	($5)	($4)	($2)	($45)	
Capex Opex Spend	$0	$0	$0	$0	$0	$0	$0	$0	$0	($536)	
Cash Flow	**$53**	**$47**	**$45**	**$40**	**$29**	**$28**	**$18**	**$17**	**$7**	$194	
Discounted Cash with Benefits		$26	$21	$19	$16	$11	$9	$6	$5	$2	**$8**
Discounted Cash without Benefits		$22	$17	$15	$13	$8	$7	$3	$3	($0)	**($40)**
Payback	($82)	($61)	($41)	($26)	($15)	($5)	$1	$6	$8		
Discount Rate			7.42%		NPV with Benefits	$8					
					NPV without Benefits	($40)					
			IRR with Benefits	0.4%							
					IRR without Benefits	-4%					

Service Company WACC when KEDNY KEDLI filing was made (February 2019) has been used.
Although Benefits have been included given filing strategy these will be lost from revenue and therefore this will be a negative NPV project.
*Type 1 Savings

Additional Impacts

Noted elsewhere in the investment paper.

Statement of Support

Department	Individual	Responsibilities
Business Department	Knight, Gregg	Business Representative
Business Partner (BP)	Daly, Orla	Relationship Manager
Program Delivery Management (PDM)	Devireddy, Narayan	Program Delivery Director
IT Finance	DelGrosso, Edward	Vice President

IT Regulatory	DeMauro, Daniel J.	Director
Security	Wilson, Elaine	Director
Service Delivery	Detota, Brian A.	Principal Analyst
ARB Verification	Schoener, Andy	Director
Enterprise Portfolio Management	Cronin, Daniel	Analyst

Reviewers

Function	*Individual*
Regulatory	Mancinelli, Lauri A.
Jurisdictional Delegate - Electric NE	Easterly, Patricia
Jurisdictional Delegate - Electric NY	Harbaugh, Mark A.
Jurisdictional Delegate - FERC	Hill, Terron
Jurisdictional Delegate - Gas NE	Smith, Amy
Jurisdictional Delegate - Gas NY	Lombardo, Frank
Procurement	Chevere, Diego

Decisions

The Senior Executive Sanctioning Committee (SESC) endorsed this paper at a meeting held on 01/27/2020:

(a) ENDORSED the investment of $70.196M and a tolerance of +/-10% for purposes of Pre-Project Framing and Enterprise Design in accordance with the program's business case plan.

(b) NOTED the potential investment of $562.438M with a tolerance of +/-15%, contingent upon submittal and approval of a Project Sanction paper following completion of Pre-Project Framing and Enterprise Design in accordance with the program's business case plan.

(c) NOTED that Daly, Orla has the approved financial delegation to undertake the activities stated in (a).

(d) SUBMITTED for PLc approval meeting scheduled on 03/18/2020.

(e) APPROVED the run-the business (RTB) of $7.142M (per annum) for 5 years.

Signature _____

Date January 27, 2020

Margaret Smyth
US Chief Financial Officer
Chair, Senior Executive Sanctioning Committee

Appendix

SANCTION REQUEST BREAKDOWN BY RELEASE:

Total Including AFUDC		$ 562,438,383
Pre-Project Framing and Enterprise Design		$ 70,195,992
Capex	$ 46,705,609	
Opex	$ 23,490,383	
Release 1		$ 176,108,622
Capex	$ 120,620,260	
Opex	$ 55,488,362	
Release 2		$ 168,667,897
Capex	$ 109,985,832	
Opex	$ 58,682,065	
Release 3		$ 147,465,871
Capex	$ 89,686,686	
Opex	$ 57,779,185	

BENEFITING OPERATING COMPANIES:

Operating Company Name	**Business Area**	**State**
Niagara Mohawk Power Corp – Electric (NM)	Electric Distribution	NY
Niagara Mohawk Power Corp – Gas (NM)	Gas Distribution	NY
Massachusetts Electric Company	Electric Distribution	MA
Nantucket Electric Company	Electric Distribution	MA
Narragansett Gas Company	Gas Distribution	RI
Narragansett Electric Company	Electric Distribution	RI
KeySpan Energy Delivery New York (KEDNY)	Gas Distribution	NY
KeySpan Energy Delivery Long Island (KEDLI)	Gas Distribution	NY
Boston Gas Company	Gas Distribution	MA
Colonial Gas Company	Gas Distribution	MA

DETAILED BENEFITS

Type 1	**Release 1 Recurring Benefit**	**Release 2 Recurring Benefit**	**Release 3 Recurring Benefit**
Combining Gas & Electric bills in Rhode Island	$0	$1,172,976	$1,172,976
Combining Gas & Electric bills in Massachusetts	$595,284	$1,461,420	$1,461,420
IT RTB cost reduction moving legacy CIS to SAP cloud PaaS + AMS (App Maint, Licenses, Mainframe, Server/Storage)	$2,058,338	$3,617,765	$5,313,742
Supplier Services expense reduction (Issues management, Cancel/Rebill activity, Mass drop/change processing). ESCO functionality less people to administer	$150,000	$200,000	$300,000
Eliminate Special Billing FTE's (Offline and Special Ledger rate elimination). Bills currently done outside billing systems	$50,000	$50,000	$50,000

Reduced UPS costs for CRIS diverted bills. Bills currently sent to a handling facility which are then resent to the end customer.	$23,400	$23,400	$23,400
Payments Processing expense reduction (cross-company transfers, cash balancing, mis-applied payments (suspense), automated returned payments, other). Synergy of operating in a single system	$34,041	$60,030	$81,200
Credit & Collections expense reduction - field selection and dispatch - manually pulling data to visit homes to collect bills	$182,700	$182,700	$182,700
Credit & Collections expense reduction - agency management fees	$3,390	$15,299	$25,000
Eliminate internal EDI (electronic data interface) infrastructure and support costs*			
Eliminate internal EDI infrastructure and support costs*			
Eliminate mainframe refreshes*			

Type 2	**Release 1 Recurring Benefit**	**Release 2 Recurring Benefit**	**Release 3 Recurring Benefit**
Decreased cost of billing exceptions - AMO - Single exception queue to manage, reduction in overall exception volume; billing exceptions can be worked more efficiently through: "root cause" analysis, escalation of exceptions, editing of billing parameters, validation of high-low checks, etc.	$836,736	$1,062,167	$1,307,400
Reduced cost to implement future projects - (More configuration based instead of active development)	$1,838,969	$3,217,275	$4,340,000
Improved bankruptcy processing efficiencies	$10,125	$26,625	$37,500
Improved liens processing	$10,125	$26,625	$37,500
Improved collection notice processing	$10,125	$26,625	$37,500
Dormant Review process improvements	$20,250	$53,250	$75,000
Payment Agreement process improvements	$101,250	$266,250	$375,000
Automated 1099 interest processing	$10,125	$26,625	$37,500
Improved billing processes for lighting*			
Decreased cost of billing exceptions – Billing Operations*			
Avoided future cost of increased legacy application maintenance*			
Contact Center - improved call routing - centers with same technologies can more easily shift work and load balance*			
An improved cancel/rebill process*			
Reduction in NoBills (broken accounts) due to system improvements*			
Reduction in automated payments creating excess credits on finaled accounts - system will			

transfer automatically to new accounts*			
Accommodate Retail Choice including all transactions and charges (connection charges, read charges, reconnect charges, change charges, disconnect charges) and the ability to conduct mass reassignment of customers to the utility or another supplier*			
Process improvements for billing adjustments such as, recalculation of the consumption and billing for a mis-configured meter, viewing of all adjusted customer billing and service disputes, application for wrong rate or incorrect usage, utilization of the billing determinants in effect at the time for all calculations, etc*			
Single set of system integrations - daily gas factors, daily and monthly price factors, FCS meter reading system, ESCo EDI transactions, monthly General Ledger and Revenue feeds, etc*			
Improvements to budget billing such as - start & stop on current bill (CRIS), informing customers of removal from budget billing, viewing details of budget billing, configuration of budget billing, adjust budget bills in masse (prep for rate increase), and integration with CxP for budget billing*			
Advanced Consumption recording and processing*			
Allow single gas / electric field orders – union combine*			
Coding of Protections (Hardship, Elderly, Infant, Medical) and enrollment in the Low- Income Rate*			
Recertification of Protections and the Low-Income Discount Rate for dual commodity customers*			
Consistent use of customer preferences for all outbound communication			
Accommodate mass rebates/refunds with a flexible refund method which does not require IT development			
Contact Center - reduced Average Handle Time (AHT), call transfers			
Improved payment application such as, associating a payment to new vs older debt, applying short payments to line items based on user or customer assigned priority, and providing on-line reapplication of payment allocations.			
Improved AMI integration to support the request of an AMI read or other AMI configuration / function, and the acceptance of customer-sourced meter reads from external systems.			
Accommodate billing for customers with merchandise sales, rentals, lease contracts, and the ability to bill in advance and in arrears.			
Improved summary account & billing			
Final Bill Management process improvements			
Approval of Account Adjustments			
Payment Type processing improvement			
Field order management process improvements			
Less Than Logic at Reconnect (ESCo Billing)			
Data retention and archiving			
Offsetting business task increase			
Improvement in analytics and rates development and modeling.			
Automation of all bill calculations and the generation of bills, no matter how complex the			

rate structure, and the ability to add new rates and calculations without programming.
Cashiering function

Type 3	Release 1 Recurring Benefit	Release 2 Recurring Benefit	Release 3 Recurring Benefit
Training efficiency – reduce documents, delivery, maintenance	$209,757	$364,100	$532,000
Enable completion and value realization of GBE and CxP initiatives			
Enable all employees (contact center, back office, field) with relevant and appropriate view of the customer to make informed decisions			
Reduce time and outages (eliminate CRIS Seibel offline processing)			
Improved channel availability and self-service via alignment with CxP			
Data cleansing positive effects on numerous business functions (Contact Center, AMO, Customer, Work management, etc.)			
Business Continuity & Disaster Recovery efficiency			
Better overall system with more complete processes			
Complete processes allow one way of doing business			
Business and Technical staffing / experience / skill			
Changes to one system benefits multiple companies			
Eliminate risks associated with very limited CRIS and CSS technical support			
Customer self-service billing analytics			
Improved distributed generation portal integration			
New customer products and services			
Common Bill Design			
Modern CIS provides attributes for quality, service and continued growth; cloud service enabled technology			
Deliver a single, integrated customer data model with improved analytics capability			

BENEFITS WITH AN ASTERISK REQUIRE ADDITIONAL INFORMATION TO DETERMINE PROJECTED SAVINGS

Date of Request: August 14, 2020 Request No. DPS-332
Due Date: August 24, 2020 NMPC Req. No. NM -366

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Chelsea Kruger and Kayla Whitaker

TO: National Grid, Shared Services Panel/Information Technology Panel

SUBJECT: Customer Information System — Outages

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. For each of the years, 2016, 2017, 2018, and 2019, separately provide the number of high or critical priority failures and/or outages experienced in the Customer Service System (CSS).

2. Indicate how many of these failures/outages affected all National Grid USA companies.

3. Indicate how many of these failures/outages affected only NMPC.

4. Indicate how many of these failures/outages affected only National Grid's New York operating companies (NMPC, KEDNY, and KEDLI).

5. For each outage, provide a brief description, the length/duration of the outage, and the root cause of the outage.

Response:

1. Please see Attachment 1, which provides a detailed log of incidents involving the legacy CIS system (CSS) late 2016 – 2019 (calendar years). 2016 information is partial because of implementation of a new incident management system that year.

2. None of these failures affected all US companies. There are incidents specific to the CSS system. KEDNY and Boston Gas are on a separate legacy system.

3. None of these failures affected only Niagara Mohawk. They affected all operating companies on the legacy CSS system.

4. None of these failures affected only Niagara Mohawk and KEDLI. They affected all operating companies on the legacy CSS system. As noted in the response to question 2, KEDNY is on a different legacy system.

5. The detailed incident log (Attachment 1) includes descriptions, length/duration, and root cause (when available).

Name of Respondent: Date of Reply:
Jeffrey P. Martin August 24, 2020

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC0021297	CSS	2 - High	2016-10-16 21:40:00	2016-10-16 21:40:00	2016-10-16 21:50:00	600	Outage	Affected Application or Service, Workgroup Affected and locations: CSS, and phones What tasks are you trying to perform in the system? cant sign on to CSS in the dispatch office in melville Is this issue only impacting you to your knowledge or also other departments, sites or regions? unsure When did this work the last time for you? 9:40 EST Requestors' Name and job position: XXXXXXXXXX, Supervisior Requestor's Contact Phone: XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? n/a Is this a total loss of service or performance degradation? total loss of service Can you perform your task in another way or through another system for a limited time? no What is the business or goodwill impact on NG? unable to report gas leaks See KM1198531 to send email to CIM	US	
INC0033273	CSS	2 - High	2016-11-23 07:00:00	2016-11-23 07:00:00	2016-11-23 09:08:00	7680	Outage	Affected Application or Service, Workgroup Affected and locations: 540 Dick Road, Depew, NY 14043 - Buffalo, NY - css What tasks are you trying to perform in the system? Accessing CSS Is this issue only impacting you to your knowledge or also other departments, sites or regions? 15-20 users in the Buffalo office - & 16 people in Columbus, OH When did this work the last time for you? Yesterday (11/22/2016) Requestors' Name and job position: XXXXXXXXXX, Supervisor Requestor's Contact Phone: (cell) XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? Desk - XXXXXXXXXX Is this a total loss of service or performance degradation? Total loss Can you perform your task in another way or through another system for a limited time? No What is the business or goodwill impact on NG? User advises work is starting to queue up. She advises it will be a high impact on NG. User advises the error message is: The text for message number 27513 could not be found in the codes table used by the cmnmsg. See KM1198531 to send email to CIM	US	
INC0034039	CSS	2 - High	2016-11-25 20:50:00	2016-11-25 20:50:00	2016-11-25 22:43:00	6780	Outage	Affected Application or Service, Workgroup Affected and locations: CSS What tasks are you trying to perform in the system? Emergency and Non-Emergency Work Orders are not showing up in IScheduler or MWork. They are able to be created within CSS, just not able to go anywhere after that. Is this issue only impacting you to your knowledge or also other departments, sites or regions? All regions that are using CSS When did this work the last time for you? Within the last hour Requestors' Name and job position: XXXXXXXXXX, Operations Supervisor Requestor's Contact Phone: XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? XXXXXXXXXX Is this a total loss of service or performance degradation? Performance Degradation Can you perform your task in another way or through another system for a limited time? They are verballing dispatching the orders as of now. What is the business or goodwill impact on NG? It will create delays in response to these work orders. See KM1198531 to send email to CIM	US	
INC0035646	CSS	2 - High	2016-12-03 06:30:00	2016-12-03 06:30:00	2016-12-03 08:23:00	6780	Disruption	• Users in multiple locations reported the CSS application was not functioning as designed. • Users were seeing a "DB2 Processing error" when maintaining or creating new "Other Service" orders in CSS.	US	
INC0044595	CSS	2 - High	2017-01-12 14:29:40	2017-01-12 14:29:40	2017-01-12 14:29:41	1	Outage	CSS - Service Disruption	US	

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC0048602	CSS	2 - High	2017-01-29 22:20:00	2017-01-29 22:20:00	2017-01-29 23:18:00	3480	Outage	Affected Application or Service, Workgroup Affected and locations: Production Server (natappnwh018) What tasks are you trying to perform in the system? Log into the Server. The server is not responding to anyone who attempts to log into it. User needs this Server to be rebooted. Is this issue only impacting you to your knowledge or also other departments, sites or regions? Various regions When did this work the last time for you? Last known use was around Friday. He specifically is unaware of when the Server stopped responding. Requestors' Name and job position: XXXXXXXXXX, Systems Analyst Requestor's Contact Phone: XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? N/A Is this a total loss of service or performance degradation? Yes Can you perform your task in another way or through another system for a limited time? There are other servers that can be logged into for now. What is the business or goodwill impact on NG? This connects to the billing system for national grid. Approximately 300-500 agents will try to connect to this server to perform their responsibility, and won't be able to. See KM1198531 to send email to CIM	US	
INC0050721	CSS	2 - High	2017-02-03 09:30:00	2017-02-03 09:30:00	2017-02-03 10:02:00	1920	Disruption	Affected Application or Service, Workgroup Affected and locations: CSS What tasks are you trying to perform in the system? Cannot access Massachusetts customer records Is this issue only impacting you to your knowledge or also other departments, sites or regions? 60+ users in her area plus about 80 or so in the call center in Endicott When did this work the last time for you? went down about half an hour ago Requestors' Name and job position: XXXXXXXXXX, analyst Requestor's Contact Phone: XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? XXXXXXXXXX Is this a total loss of service or performance degradation? severe degradation Can you perform your task in another way or through another system for a limited time? no workaround What is the business or goodwill impact on NG? unable to access any Mass customer accounts, financially impacting the company. See KM1198531 to send email to CIM	US	
INC0070458	CSS	3 - Medium	2017-04-04 13:28:00	2017-04-04 13:28:00	2017-04-04 13:29:00	60	Disruption	Affected Application or Service, Workgroup Affected and locations: See below What tasks are you trying to perform in the system? Is this issue only impacting you to your knowledge or also other departments, sites or regions? When did this work the last time for you? Requestors' Name and job position: Requestor's Contact Phone: Please provide alternative contact - phone number available 24/7 if possible? Is this a total loss of service or performance degradation? Can you perform your task in another way or through another system for a limited time? What is the business or goodwill impact on NG? Error message or problem: CSS When the users login they can find out anything about the customers except their meter. ERROR:When you Select meter, The 17451 could not be found in the CMNSG Box display function. effecting 100 people. Name: XXXXXXXXXX Username: XXXXXXXXXX Location: 25 Hub Drive Melville, NY 11747 Floor 1 Phone number: XXXXXXXXXX Best time to contact: m-f et 24/7 Email: XXXXXXXXXX See KM1198531 to send email to CIM	US	

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC0071114	CSS	2 - High	2017-04-07 08:00:00	2017-04-07 08:00:00	2017-04-08 07:00:00	82800	Disruption	Error message or problem: Error 18131, Input date to architecture function is not a valid date. User has tried rebooting and is still getting this error. Name: XXXXXXXXXX Username: XXXXXXXXXX Location: 55 bearfoot rd, northboro Phone number: XXXXXXXXXX Best time to contact: anytime asap Email: XXXXXXXXXX	US	
INC0079480	CSS	2 - High	2017-05-05 13:30:00	2017-05-05 13:30:00	2017-05-05 14:39:00	4140	Disruption	SEE KM1182330 Affected Application or Service, Workgroup Affected and locations: CSS What tasks are you trying to perform in the system? Logon Is this issue only impacting you to your knowledge or also other departments, sites or regions? One Metrotech Long Island When did this work the last time for you? Requestors' Name and job position: XXXXXXXXXX Supervisor Requestor's Contact Phone: XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? Is this a total loss of service or performance degradation? 30 users affected out of 60 Can you perform your task in another way or through another system for a limited time? NO What is the business or goodwill impact on NG? See KM1198531 to send email to CIM	US	
INC0085353	CSS	2 - High	2017-05-25 08:00:00	2017-05-25 08:00:00	2017-05-25 12:54:00	17640	No Service Impact	Affected Application or Service, Workgroup Affected and locations: What tasks are you trying to perform in the system? CSS Batch Issue, CSS Production Batch is not done and it is 1130am, concerned about being able to start Thursday's propcessing on time Is this issue only impacting you to your knowledge or also other departments, sites or regions? Syracuse and Northboro When did this work the last time for you? 7:15am today Requestors' Name and job position: XXXXXXXXXX XXXXXXXXXX Requestor's Contact Phone: XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? Is this a total loss of service or performance degradation? No it is not impacting online system Can you perform your task in another way or through another system for a limited time? No What is the business or goodwill impact on NG? Bills will not be timely to customers See KM1198531 to send email to CIM	US	
INC0085360	CSS	2 - High	2017-05-25 08:00:00	2017-05-25 08:00:00	2017-05-25 16:21:05	30065	Functional Data	Affected Application or Service, Workgroup Affected and locations: What tasks are you trying to perform in the system? CSS SO Charges not showing up on Bills Is this issue only impacting you to your knowledge or also other departments, sites or regions? Syracuse and Northboro When did this work the last time for you? 8am Requestors' Name and job position: XXXXXXXXXX XXXXXXXXXX Requestor's Contact Phone: XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? Is this a total loss of service or performance degradation? No Can you perform your task in another way or through another system for a limited time? No What is the business or goodwill impact on NG? It will affect NG Reputation See KM1198531 to send email to CIM	US	

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC0087731	CSS	2 - High	2017-06-02 08:47:00	2017-06-02 08:47:00	2017-06-02 09:51:00	3840	Disruption	Affected Application or Service, Workgroup Affected and locations: CSS -job was abandoned - job CN554DPD unable to run the job because it failed. What tasks are you trying to perform in the system? We are going to miss SLA for the dateflip job CN599DPD in CUSTOMER application because of abended Is this issue only impacting you to your knowledge or also other departments, sites or regions? When did this work the last time for you? Yesterday(6/1/2017) Requestors' Name and job position: XXXXXXXXXX Datacenter Supervisor Requestor's Contact Phone: XXXXXXXXXX or Hot Line Number - XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? Is this a total loss of service or performance degradation? loss of service Can you perform your task in another way or through another system for a limited time? no What is the business or goodwill impact on NG? operational See KM1198531 to send email to CIM	US	
INC0306408	CSS	2 - High	2017-10-15 06:04:00	2017-10-15 06:04:00	2017-10-15 09:20:00	11760	Disruption	a. Name: XXXXXXXXXX b. Username: XXXXXXXXXX c. Location: Melville d. Phone number: XXXXXXXXXX e. Email: XXXXXXXXXX f. Error message or problem: CSS user cant enter jobs gets error.. the text 4 message number 6234 sould not be found in the codes table used by the cmnmsgbox display function. This wil not allow then to enter gas leasks a. Affected Application or Service, Workgroup affected and location(s)? Melville b. What task are you trying to perform in the system: Process emergy work orders for gas leaks c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? eveyone in meville d. When did this work the last time for you? since 2230 e. Requestor's name and job position: XXXXXXXXXX disptacher f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: none h. Is this a total loss of service or performance degradation? yes i. Can you perform your task in another way or through another system for a limited time? no j. What is the business or goodwill impact on NG? They cant process gas leaks Affected Application or Service, Workgroup Affected and locations: What tasks are you trying to perform in the system? Is this issue only impacting you to your knowledge or also other departments, sites or regions? When did this work the last time for you? Requestors' Name and job position: Requestor's Contact Phone: Please provide alternative contact - phone number	US	
INC0409050	CSS	2 - High	2017-10-30 17:30:00	2017-10-30 17:30:00	2017-10-30 19:57:01	8821	No Service Impact	Affected Application or Service, Workgroup Affected and locations: CSS company wide What tasks are you trying to perform in the system? Billing Is this issue only impacting you to your knowledge or also other departments, sites or regions? company wide When did this work the last time for you? last night Requestors' Name and job position: XXXXXXXXXX contractor with IBM Requestor's Contact Phone: XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? XXXXXXXXXX Is this a total loss of service or performance degradation? performance degredation Can you perform your task in another way or through another system for a limited time? no What is the business or goodwill impact on NG? "200,000+ customers will not be able to be billed which could cost millions of dollars" See KB0011390 to send email to CIM	US	

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC1164913	CSS	2 - High	2018-03-10 06:30:00	2018-03-10 06:30:00	2018-03-10 08:42:00	7920	Disruption	a. Name: XXXXXXXXXX b. Username: XXXXXXXXXX c. Location: Melville Hub Drive 5220 (Gas dispatch center) d. Phone number: XXXXXXXXXX e. Email: XXXXXXXXXX f. Error message or problem: DB2 Processing error -user is unable to create gas leaks -having error in css -db2 processing error -tried multiple restart -affecting all in the team a. Affected Application or Service, Workgroup affected and location(s)? Customer Service System - Melville Hub Drive 5220 (Gas dispatch center) b. What task are you trying to perform in the system: trying to create emergency gas leak c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? only the whole dispatch center right now (4 dispatchers, 2 call center representatives d. When did this work the last time for you? around 10 minutes ago 6:30 AM US TIME e. Requestor's name and job position: XXXXXXXXXX f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: XXXXXXXXXX h. Is this a total loss of service or performance degradation? yes i. Can you perform your task in another way or through another system for a limited time? no work around j. What is the business or goodwill impact on NG? This is a critical application and they cant create emergency leak and job to dispatch to servicemen of NY. This can be a safety issue if not solved immediately.	US	
INC1261521	CSS	2 - High	2018-03-27 11:18:01	2018-03-27 11:18:36	2018-03-27 11:48:47	1811	Disruption	Affected Application or Service, Workgroup Affected and locations: CFE at Iqor locations in Colombus and Bethlehem What tasks are you trying to perform in the system? reviewing customer accounts and taking payments Is this issue only impacting you to your knowledge or also other departments, sites or regions? Iqor locations in Colombus and Bethlehem When did this work the last time for you? 5 minutes ago Requestors' Name and job position: XXXXXXXXXX Manager. Requestor's Contact Phone: XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? XXXXXXXXXX Is this a total loss of service or performance degradation? Performance degredation. Can you perform your task in another way or through another system for a limited time? No What is the business or goodwill impact on NG? Call center reps for Iqor unable to assist customers and take payments. See KB0011390 to send email to CIM	US	
INC1278045	CSS	2 - High	2018-03-29 08:11:03	2018-03-29 08:11:03	2018-03-29 11:46:11	12908	Disruption	a. Affected Application or Service, Workgroup affected and location(s)? Most Applications in Citrix b. What task are you trying to perform in the system: Openeing any application - c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? Multiple Locations including the service desk d. When did this work the last time for you? 8:15 am EST e. Requestor's name and job position: XXXXXXXXXX HelpDesk Analyst f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: No h. Is this a total loss of service or performance degradation? Pretty much a total loss i. Can you perform your task in another way or through another system for a limited time? No j. What is the business or goodwill impact on NG? Unable to help NationalGrid employees with anything. CFE - for IQOR is affected as well	US	
INC1321332	CSS	1 - Critical	2018-04-06 17:57:57	2018-04-06 17:57:57	2018-04-06 17:58:57	60	No Service Impact	Security P1	US	

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC1350148	CSS	2 - High	2018-04-11 14:45:17	2018-04-11 14:45:38	2018-04-11 15:45:45	3607	Disruption	An Error Occurred while making the requested connection. a. Affected Application or Service, Workgroup affected and location(s)? NationalGrid Service Desk. Mainframe, SAP Gui, Lockout Status b. What task are you trying to perform in the system: All c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? Unknown d. When did this work the last time for you? about 5 min ago e. Requestor's name and job position: XXXXXXXXXX - Service Desk Agent f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: XXXXXXXXXX h. Is this a total loss of service or performance degradation? Unknown i. Can you perform your task in another way or through another system for a limited time? No j. What is the business or goodwill impact on NG? Unable to do anything	US	
INC1365217	CSS	2 - High	2018-04-13 09:40:00	2018-04-13 09:40:00	2018-04-13 11:09:16	5356	Disruption	An error occurred while making the requested connection. a. Affected Application or Service, Workgroup affected and location(s)? NGRID Help Desk; 3rd party location close to Melville, b. What task are you trying to perform in the system: Open Apps: CFE, SAP GUI; NY/KepSpan Mainframe c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? Yes d. When did this work the last time for you? 9:45 EST e. Requestor's name and job position: XXXXXXXXXX - HelpDesk f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: XXXXXXXXXX h. Is this a total loss of service or performance degradation? Mostly Loss i. Can you perform your task in another way or through another system for a limited time? No j. What is the business or goodwill impact on NG? Financial/Operational.	US	
INC1488115	CSS	2 - High	2018-05-04 11:59:49	2018-05-04 11:59:49	2018-05-04 14:30:47	9058	Disruption	 Affected Application or Service, Workgroup Affected and locations: CSS, Northboro Contact Center, 2nd floor What tasks are you trying to perform in the system? Cannot void disconnect orders Is this issue only impacting you to your knowledge or also other departments, sites or regions? Multiple agents at site When did this work the last time for you? Yesterday, 5/3 Requestors' Name and job position: XXXXXXXXXX, Customer Service Supervisor Requestor's Contact Phone: XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? Is this a total loss of service or performance degradation? No Can you perform your task in another way or through another system for a limited time? No What is the business or goodwill impact on NG? Serious	US	
INC1508453	CSS	2 - High	2018-05-09 09:10:44	2018-05-09 09:10:44	2018-05-09 10:00:55	3011	Disruption	a. Affected Application or Service, Workgroup affected and location(s)? CSS b. What task are you trying to perform in the system: Any task after logging into CSS will not respond. Employees can log-in on CSS, but CSS will not respond once logged-in. c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? National Grid in Syracuse, Northboro, Buffalo d. When did this work the last time for you? 8:00AM approx E/T e. Requestor's name and job position: XXXXXXXXXX, Supervisor of Operations f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: XXXXXXXXXX h. Is this a total loss of service or performance degradation? Performance degradation---employees can log-in on CSS, but the application will stop responding after log-in. i. Can you perform your task in another way or through another system for a limited time? No. j. What is the business or goodwill impact on NG? Not able to handle customer service or credit relations because of this.	US	

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC1510625	CSS	2 - High	2018-05-09 12:25:56	2018-05-09 12:25:56	2018-05-09 13:17:10	3074	Disruption	a. Affected Application or Service, Workgroup affected and location(s)? CSS b. What task are you trying to perform in the system: All tasks - cannot access customer info c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? Buffalo, Depew, NY, Columbus, Bethlehem, PA d. When did this work the last time for you? Error occurred 9AM INC1508394 e. Requestor's name and job position: XXXXXXXXXX - Supervisor f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: h. Is this a total loss of service or performance degradation? Performance degradation i. Can you perform your task in another way or through another system for a limited time? No work around, core system affected j. What is the business or goodwill impact on NG? Collections department, revenue stream	US	
INC1510625	CSS	2 - High	2018-05-09 12:25:56	2018-05-09 14:25:00	2018-05-09 15:30:00	3900	Disruption	a. Affected Application or Service, Workgroup affected and location(s)? CSS b. What task are you trying to perform in the system: All tasks - cannot access customer info c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? Buffalo, Depew, NY, Columbus, Bethlehem, PA d. When did this work the last time for you? Error occurred 9AM INC1508394 e. Requestor's name and job position: XXXXXXXXXX - Supervisor f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: h. Is this a total loss of service or performance degradation? Performance degradation i. Can you perform your task in another way or through another system for a limited time? No work around, core system affected j. What is the business or goodwill impact on NG? Collections department, revenue stream	US	
INC1528437	CSS	2 - High	2018-05-11 20:00:00	2018-05-11 20:00:00	2018-05-11 21:00:00	3600	Disruption	CSS - Application down Name : XXXXXXXXXX Email : XXXXXXXXXX Employee id: XXXXXXXXXX Issue: - User called in regarding CSS - System went down - Unable to get back to it as per user - Issue Started: 8 PM today US TIME - User affected: 20 users affected - Business impact: They wont be able to view customers account and it can impact NGrid financially. Application or Service, Workgroup Affected and locations: iQor center Syracuse Erie Blvd 5110 What tasks are you trying to perform in the system? Trying to view customers account Is this issue only impacting you to your knowledge or also other departments, sites or regions? For iQor center only When did this work the last time for you? 8 am US time Requestors' Name and job position: XXXXXXXXXX Requestor's Contact Phone: XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? Is this a total loss of service or performance degradation? XXXXXXXXXX Can you perform your task in another way or through another system for a limited time? no What is the business or goodwill impact on NG? They wont be able to view customers account and it can impact NGrid financially.	US	

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC1533202	CSS	2 - High	2018-05-14 07:00:00	2018-05-14 07:00:00	2018-05-14 11:55:21	17721	Disruption	Name: XXXXXXXXXX Phone: XXXXXXXXXX Email: XXXXXXXXXX Location: Gloversville Serv Ctr 5210 Asset: AI560831 Work Hours: 7am-3:30pm Affected Application or Service, Workgroup Affected and locations: CSS: Unable to login What tasks are you trying to perform in the system? Login Error "The text for 27513 could not be found in the code table..." Is this issue only impacting you to your knowledge or also other departments, sites or regions? Multiple locations When did this work the last time for you? Friday Requestors' Name and job position: XXXXXXXXXX : Office Tech Requestor's Contact Phone: XXXXXXXXXX Please provide alternative contact - phone number available 24/7 if possible? NA Is this a total loss of service or performance degradation? Total Loss Can you perform your task in another way or through another system for a limited time? No What is the business or goodwill impact on NG? P2	US	
INC1574540	CSS	2 - High	2018-05-19 22:15:00	2018-05-21 07:00:00	2018-05-21 09:04:00	7440	Disruption	KB0010911 US: Citrix : Portal issues for Field Reps a. Problem/ Request: Vendor Web access portal is not loading, gives 'page cannot be displayed.' Approximately 50. b. Name: XXXXXXXXXX c. Location: Iqor buffalo lcation. d. Phone number: XXXXXXXXXX e. Best time to contact:Anytime. f. Email: XXXXXXXXXX For DXC use -US Citrix Platforms For CSC use - Actual Device Cl Resolver Groups: DXC - GSD Follow Up - US CSC Incident Management	US	
INC1757776	CSS	2 - High	2018-06-15 04:00:00	2018-06-15 04:00:00	2018-06-22 13:30:36	639036	No Service Impact	a. Affected Application or Service, Workgroup affected and location(s)? CSS paperless biulling b. What task are you trying to perform in the system: send out paperless bills c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? Affecting all customers who request papeoless bill d. When did this work the last time for you? 6-14-18 e. Requestor's name and job position: XXXXXXXXXX IT Specialist f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: XXXXXXXXXX h. Is this a total loss of service or performance degradation? degredation i. Can you perform your task in another way or through another system for a limited time? yes, issue sends 2 copies of bill, paper and paperless j. What is the business or goodwill impact on NG? sends paper bills with paperless, financial impact	US	
INC2113458	CSS	2 - High	2018-08-24 22:18:00	2018-08-24 22:18:00	2018-08-24 23:29:00	4260	No Service Impact	Name : XXXXXXXXXX Email : XXXXXXXXXX Location : Brooklyn MetroTech 5220 Contact : XXXXXXXXXX Employee ID : XXXXXXXXXX - user called in regarding CSS - unable to issue service orders on the CSS - issue started this evening - user said there is an error message but she is just calling on behalf of her employees - user said she is the manager - user wants to raise this on a high priority ticket - users affected : everyone is affected - business impact : the contact center is accepting emergency calls only. they are unable to scheduled service orders in CSS - availability : Anytime KB0011603	US	

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC2229237	CSS	2 - High	2018-09-14 10:50:00	2018-09-14 10:50:00	2018-09-14 11:04:00	840	Disruption	a. Affected Application or Service, Workgroup affected and location(s)? CSS in 3 different call center locations; Columbus OH, Buffalo NY, Bethlehem PA b. What task are you trying to perform in the system: Customer service; knocked them out of phone calls c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? 3 different sites d. When did this work the last time for you? 9/14/18 8 am e. Requestor's name and job position: XXXXXXXXXX Manager f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: XXXXXXXXXX h. Is this a total loss of service or performance degradation? Total Loss i. Can you perform your task in another way or through another system for a limited time? No j. What is the business or goodwill impact on NG? Unable to receive calls and handle customer service.	US	
INC2238385	CSS	1 - Critical	2018-09-17 09:30:00	2018-09-17 09:30:05	2018-09-17 10:40:12	4207	Outage	XXXXXXXXXX CSS is down Affected application, service, and workgroup: CSS-not able to log in. Error: 27513 Error message code. What task are you trying to perform in the system? Accessing CSS User's/sites/departments affected? Long Island Contact Center When did it last work? 9:30 Name and job postion: XXXXXXXXXX/Supervisor Contact: XXXXXXXXXX Alternate contact: XXXXXXXXXX Location: Brooklyn Metrotech Total loss of service or performance degradation: Yes. Are you able to perform your task in another way, or through another system? No Business Impact: Very high-customers calling for emergencies for gas company Default gateway: IP Address: N/A VPN Connections: No MIM Agent: XXXXXXXXXX	US	
INC2408350	CSS	2 - High	2018-10-12 07:00:03	2018-10-12 07:00:03	2018-10-12 07:20:15	1212	Disruption	Affected Application or Service, CSS Workgroup Affected and locations: New Albany , Ohio What tasks are you trying to perform in the system? Process Payments with in CSS Is this issue only impacting you to your knowledge Can only view account can not do anything else or also other departments, sites or regions? Credit Collections When did this work the last time for you? Yesterday at 9pm Requestors' Name and job position: Manager / XXXXXXXXXX Restorer's Contact Phone : XXXXXXXXXX : Please provide alternative contact - phone number available 24/7 if possible? XXXXXXXXXX Is this a total loss of service or performance degradation? Can only view accounts nothing else C NO work around in place. an you perform your task in another way or through another system for a limited time? NO What is the business or goodwill impact on NG? See KB0011390 to send email to CIM Customer advised that users can not save payments , notes , cant not create payment arraignments only user can do its view accounts when working in CSS , Received the error message ***Sorry unexpected error has occuce you will not be abl eto process contact your leave or support *** also when trying to save contact **Error account while trying to insert *** At lest 11 users are impacted *** At lest 2 agents have rebooted and has not resolved the issue .users are accessing CSS via Citrix Name: XXXXXXXXXX Phone: XXXXXXXXXX	US	

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC2433841	CSS	2 - High	2018-10-17 04:33:00	2018-10-17 04:33:00	2018-10-17 04:45:00	720	No Service Impact	Name : XXXXXXXXXX Email : XXXXXXXXXX Location : Staten Island Gulf Ave 5220 Contact : XXXXXXXXXX Employee ID : XXXXXXXXXX - user called in regarding customer application - there was a failure on job on CSS - user said his colleague send an email in regards on this issue and it needs to raise as a P2 - users affected : multiple users affected, user is unable to provide estimated head count for this - business impact : multiple users are impacted and unable to login - availability : anytime - see below the email of his colleague From: XXXXXXXXXX Sent: Wednesday, October 17, 2018 1:40 PM To: XXXXXXXXXX Cc: PF3 PCA <PF3_PCA@csc.com> Subject: RE: P2 ticket for SLA miss Hi, There is an SLA miss for date flip job (CN599DPD) and its impacting production ,users are	US	
INC2440720	CSS	2 - High	2018-10-17 19:30:00	2018-10-17 19:30:00	2018-10-17 20:10:00	2400	Disruption	CODE RED P2 <CSS : Error message inside the application> Name : XXXXXXXXXX Email : XXXXXXXXXX Location : Melville Hub Drive 5220 Contact : XXXXXXXXXX Employee ID : XXXXXXXXXX - user called in regarding CSS - user said CSS is down - user said all the call center are affected - error message : Message to service are not successful, do you wish to retry to send the message - users affected : 40 call centers agent and 10 users on their end - user said they can able to login but they are getting an error message inside the CSS - availability : Anytime XXXXXXXXXX	US	
INC2456632	CSS	2 - High	2018-10-19 16:55:00	2018-10-19 16:55:00	2018-10-19 18:00:00	3900	Disruption	SEE KB0011568 Configuration Item - Selected based on the affected application a. Name: XXXXXXXXXX b. Phone number: XXXXXXXXXX c. Email address: XXXXXXXXXX d. Location address (including zip code): 7525 West campus Rd, New Albany Ohio 43054 depew NY, bethlam PA e. Application name: CSS f. Business issue/impact: Financial g. Number of users impacted: 150+	US	
INC2554011	CSS	2 - High	2018-11-03 11:06:00	2018-11-03 11:06:00	2018-11-03 22:00:00	39240	No Service Impact	Mainframe Jobs are failing due to - INSUFFICIENT ACCESS AUTHORITY . Yesterday was XXXXXXXXXX's last day. It appears that it is happening as with XXXXXXXXXX's movement, her access has been revoked. Need to involve security team to provide the required access authority. Due to this CSS jobs have abended - CN634DPD and CNLDVB11. Next day's job are in hold status as previous generation is not completed. If this is not fixed soon, more jobs are expected to fail.	US	

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC2748547	CSS	2 - High	2018-11-27 08:00:00	2018-11-30 12:00:44	2018-11-30 14:00:18	7174	No Service Impact	..Customers making payment on NG Website, not going through. Some payments are going through, and some aren't. Approximately 8 customer accounts-continuing to come in. Affected application, service, and workgroup: National Grid Website What task are you trying to perform in the system? User's/sites/departments affected? MetroTech Brooklyn When did it last work? 25th, complaints started on 26th. Name and job postion: XXXXXXXXXX Contact: XXXXXXXXXX Alternate contact: N/A Location: Total loss of service or performance degradation: Payment feature is the most used feature, loss of service. Late charges, overdrawn accounts. This group is correct according to the KB Are you able to perform your task in another way, or through another system? Business Impact:Late charges, overdrawn accounts.	US	
INC2859254	CSS	2 - High	2018-12-17 14:15:00	2018-12-17 14:15:00	2018-12-17 14:35:00	1200	Disruption	Error: Just stopped working logged in or logged out. User reports it's coming back up slowly. CSS-long Island Contact Center 70+ Affected application or service: CSS Workgroup affected: Contact Center, Long Island Metro Tech Center, 2nd floor Location: Brooklyn MetroTech 5220 One Metro Tech Center NY 11201 Other user's/location impacted:N/A When did it last worK? 5 minutes ago. Requestors name: XXXXXXXXXX E-mail: XXXXXXXXXX Requestors contact: XXXXXXXXXX Requestors alternative contact: XXXXXXXXXX Total loss of service or performance: Yes Able to perform task in another way or through another system: No Business impact: High Impact-take emergency calls, all calls for system come through center. Frontline of company.	US	
INC2893034	CSS	2 - High	2018-12-21 08:52:44	2018-12-21 08:52:44	2018-12-21 15:52:00	25156	Disruption	Due to numerous abends, CSS batch didn't complete on time causing delays across the system and the following impact: Impact: • All Company's (CSS) • 14,000 accounts (will need to be rebilled) • The revenue posted to the accounts, but no bill was produced • EDI, EFT, Bill Print and Paperless bill delivery. • Bill delay – 14,000 bills meant to go out today will go out Thursday December 27 – due to Holiday (no batch runs) • Working with Collections to determine impact Billing is working on this fix. CRC is also being notified. All, Supplier Services (XXXXXXXXXX, XXXXXXXXXX, and XXXXXXXXXX) has reached out to me indicating that they are seeing significant issues in CSS across all companies (except for 37) for missing EDI transactions and posting issues in CSS. They have noticed that there are a large number of items in their variance reports. I have reviewed a handful of accounts and I concur with Supplier Services findings. There appears to have been an issue where the ESCO billing jobs did not complete successfully and/or fully as part of batch. For example account 00351-97114. If you look at the account on the 02_04 debt activity table you will see that there is a row posted for the 0201 (electric ESCO) business has a new row for 12/20/2018 for $906.17. If you look at the 03_29 and 03_30 tables that track the ESCO dollars for creation of 810 transactions you can see that there are no records for 12/20/2018 posted. Also if you review the outbound EDI files you will see that no 810 (invoice) or 820 (payment) transaction were created. I believe the situation right now is that the ESCO charges are on the	US	

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC2911880	CSS	2 - High	2018-12-28 07:00:00	2018-12-28 07:00:00	2018-12-29 10:57:00	100620	Degradation	Business Critical Affected application or service: Today, 40000 estimate did not receive bill Workgroup affected: Billing revenue Location: Syracuse NY 300 West Erie BLVD Other user's/location impacted: When did it last work? User noticed issue this morning. Requestors name: XXXXXXXXXX Requestors contact: XXXXXXXXXX Requestors alternative contact: XXXXXXXXXX Total loss of service or performance: Yes Able to perform task in another way or through another system: No Business impact: Unable to pay- $$$$ Money Unable to provide. One time incident.	US	
INC2978746	CSS	2 - High	2019-01-10 12:30:00	2019-01-10 20:50:33	2019-01-14 09:53:14	306161	Disruption	USCB - CSS (XP) This is for ongoing XP issue with CSS release on DXC side DXC is not able to send CSS package to Desktop Stag Machine So CSS release can't move forward ..CSS push has regulatory changes so it needs to go ASAP	US	Delay to CSS code push
INC2979797	CSS	2 - High	2019-01-11 07:00:00	2019-01-11 03:54:28	2019-01-12 11:50:52	114984	Disruption	USCB - CSS Batch Delays Upgrade P3-P2 FAULT: CSS : SLA Breach job failure Employee ID: XXXXXXXXXX Name: XXXXXXXXXX USER ID: XXXXXXXXXX Contact number: XXXXXXXXXX Location: India Issue started: it should complete around 4am EST and now its currently 4:15pm EST. users affected: no one is able to login its impacting onlines more 100 users as per user. Business impact: customer batch is delayed due to this issue. onlines are not getting up on time. - user called in requesting to raise ticket and assign to css billing team. - issue is regarding incomplete job. - customer batch is delayed due to this issue. - SLA MISS for DATE FLIP JOB CN599DPD - this ticket is related to INC2628596.	US	The lack of initialization of the WFM data area caused the processing to try producing a WFM over & over and Corrupted RSAM restart point.Hence Billing (CN400DPD) Job again went in loop while processing rare situation where Net Metering host/satellite accounts getting final. Introduced in April 2018 – Net Metering Project) Delay in transmission of files to novitox. 2) delay in transmission of variance report and it's accuracy 3) Delay in transmission of other files to users. 4) Online users may get impacted. We are currently in impact and Contact Centers are also impacted
INC3047152	CSS	2 - High	2019-01-22 05:30:00	2019-01-22 08:13:32	2019-01-23 11:35:56	98544	Disruption	US Customer Business – CSS Batch (Double Payment) a. Affected Application or Service, Workgroup affected and location(s)? Syracuse Erie Blvd 5210 Issue: client reported that payment s are being posted twice one for 1/18/19 and 1/21/19 instead of just the 1/18/19 b. What task are you trying to perform in the system: css c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? d. When did this work the last time for you? 1/22/19 e. Requestor's name and job position: customer Rep XXXXXXXXXX f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: h. Is this a total loss of service or performance degradation?performance degradation i. Can you perform your task in another way or through another system for a limited time? j. What is the business or goodwill impact on NG? payments	US	There were differences between the CSS Batch Schedule and NG Holiday schedule which caused the double payment to run on Cash input holiday. and also the communication delay from NG Payments/Controls on confirmation due to holiday which allowed the batch to initiate and dont have enough time of bypassing the cash stream analysis. customers payments double posted ITT 119598 has been implemented in production. Also communication is being sent for all the holidays to avoid such issues.

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC3048739	CSS	2 - High	2019-01-22 09:53:02	2019-01-22 09:53:02		0	Disruption	USCB - CSS, CRIS and CFE a. Affected Application or Service, Workgroup affected and location(s)? css prod retrieval error try and access your application later or contact your help desk b. What task are you trying to perform in the system:ANYTHING c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? site d. When did this work the last time for you? Yesterday e. Requestor's name and job position: XXXXXXXXXX f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: XXXXXXXXXX h. Is this a total loss of service or performance degradation? performance degradation i. Can you perform your task in another way or through another system for a limited time? no j. What is the business or goodwill impact on NG? Unable to process orders within css	US	
INC3063471	CSS	2 - High	2019-01-24 07:00:00	2019-01-24 00:42:25	2019-01-24 12:25:05	42160	Disruption	USCB - CSS Batch Delays Batch is on hold due to 4 core billing job abends: CN400DPD, CN401DPD, CN402DPD & CN407DPD. Entire batch may get delayed due to this. IBM Bridge - https://ibm.webex.com/join/XXXXXXXXXX	US	The mainframe is at its max capacity for storage. With the constant increase in data, we need to review the current state and either reduce what is stored or move to update the solution to allow further expansion of storage.
INC3455401	CSS	2 - High	2019-03-22 07:00:00	2019-03-22 05:51:12	2019-03-22 11:42:36	21084	Disruption	USCB - CSS Name: XXXXXXXXXX Employee id: XXXXXXXXXX CSS - Batch jobs delayed 3/22 Phone: XXXXXXXXXX People impacted: 1000 employees Business justification - all of our region of call center that uses css will not be able to access cust data Needs to be finished always at 7am today Requested P3 ticket for now SEE KB0013528 US: CSS (Customer Service System): How do I Handle the Error "You are not authorized to view account initiation customer validation page", after submitting customer to Experian in CSS? KB0011715 US: CSS (Customer Service System): How do I Handle an Issue Where a User Cannot Add, Release, or Maintain Service Orders in CSS? KB0011814 US: CSS (Customer Service System): How do I Handle an Issue where CSS Job CN343RPD Fails? KB0011717 US: CSS (Customer Service System): How do I Handle the error "no work groups were found that matched the search criteria" from CSS? KB0011603 US: CSS (Customer Service System): How do I Handle Errors from CSS? KB0011712 US: CSS (Customer Service System): How do I Handle the Error "Username does not exist" from CSS? KB0011909 US: CSS (Customer Service System): How to handle a Gas Disconnect Follow-Up WFM issue KB0011910 US: CSS (Customer Service System): How to handle a Gas Safety Access WFM issue KB0011911 US: CSS (Customer Service System): How to handle an Audit WFM issue	US	Invalid situation encountered during job CN680DPD during CSS Batch, "multiple rows in tariff history table" These delays in Friday batch runs are causing a recurring delay in the Friday pushes that mean CC agents do not have access to CSS until the push is complete. There appears to be no rythum or reason why this keeps happening. The error was due to the bad data. which was later fixed by business team by eliminating bad data.
INC3896376	CSS	2 - High	2019-05-25 01:00:00	2019-05-28 14:39:38	2019-05-30 00:57:48	123490	Disruption	NSI - USCB - CSS (IQOR) Hi, Please create a P2 ticket to Verizon network team (Chris Gatland's team) for looking into connectivity failure with IQOR as IQOR upgraded their server last week .Please involve IQOR network team as well. Date and time of error: Mon May 27 17:24:52 EDT 2019 Unable to connect to External Sftp server.. (ngrid@ftpconnect.iqor.com)com.jcraft.jsch.JSchException: Session.connect: java.security.InvalidAlgorithmParameterException: Prime size must be multiple of 64, and can only range from 256 to 1024 (inclusive Regards, XXXXXXXXXX	US	IQOR upgraded their environment, which is not compatible with NG environment. IQOR stood up an SFTP server for the lower version NG is using Wipro are manually sending the files. The could impact IQOR users who may be unable to perform collections and accounts receivable management and then send the inbound file to update CSS.

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC4070084	CSS	2 - High	2019-06-21 09:38:00	2019-06-21 09:53:04	2019-06-21 20:13:11	37207	Disruption	USCB - CSS CSS freezing, unable to login • Problem/Issue: 44 user, css freezes sporadically or unable to login and forcing agents to reboot issue on going for 13 minutes • Asset: NCI computer • Name: XXXXXXXXXX • Location: (street/bldg./floor/cube#/city/state): NCI Endicott NY • Phone: XXXXXXXXXX • Best hours to contact: 9a to 6p • Email: XXXXXXXXXX	US	NCI Contact Centre and IQOR experienced a degraded performance.
INC4145226	CSS	2 - High	2019-07-02 12:00:00	2019-07-02 12:29:31	2019-07-02 18:16:14	20803	Degradation	USCB - CSS a. Affected Application or Service, Workgroup affected and location(s)? CSS b. What task are you trying to perform in the system: all functions c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? just her area d. When did this work the last time for you? CSS worked five minutes ago e. Requestor's name and job position: XXXXXXXXX supervisor f. Requestor's contact phone: XXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: XXXXXXXXX h. Is this a total loss of service or performance degradation? total loss i. Can you perform your task in another way or through another system for a limited time? no j. What is the business or goodwill impact on NG? business	US	Monitoring team missed an alert in the ESP tool. Slow response to CSS users. DXC Operations/Monitoring team have updated their process to identify these issues. Process with the swivel chair has been reviewed with DXC.
INC4155743	CSS	2 - High	2019-07-03 08:30:00	2019-07-03 13:34:53	2019-07-03 15:47:44	7971	Disruption	US Customer Business - Citrix a. Affected Application or Service, Workgroup affected and location(s)? Client called and stated while working in CSS system crashed, When trying to log back in CSS via Citrix, Citrix either disappears or gives page cannot be displayed error b. What task are you trying to perform in the system: Access Citrix c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? NY, PA, OH, NC estimated 150+ users d. When did this work the last time for you? 7/3/19 @1:30pm est e. Requestor's name and job position: XXXXXXXXX Operations Supervisor f. Requestor's contact phone: XXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: XXXXXXXXX h. Is this a total loss of service or performance degradation?Production Preformance i. Can you perform your task in another way or through another system for a limited time? No j. What is the business or goodwill impact on NG? Not able to accept payments from National Grid customers	US	In absence of the exact error codes, it is difficult to identify the cause and the scope of this investigation.
INC4493117	CSS	2 - High	2019-08-26 09:30:00	2019-08-26 09:32:48	2019-08-26 11:12:50	6002	Disruption	Finance & Business Services (US) - CSS a. Affected Application or Service, Workgroup affected and location(s)? CSS b. What task are you trying to perform in the system: Change the rate for the account c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? 20 user d. When did this work the last time for you? Friday e. Requestor's name and job position: XXXXXXXXX CSR1 f. Requestor's contact phone: XXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: XXXXXXXXX h. Is this a total loss of service or performance degradation? Total loss i. Can you perform your task in another way or through another system for a limited time? No he can not j. What is the business or goodwill impact on NG? National grid cant service customers	US	IBM identified a data repair file running which was stopped to restore service. The data file had been delayed due to the CSS archiving change (CHG0106783). The archiving change had job failure caused by one of the Archive tables 12/01 issue since it was full. Data repair was supposed to run over the weekend, but CSS archiving process had caused delayed to the completion of data repair job. An issue has been reported with the CSS Public assistance panel, impacting 20 users. This will have a reputational impact if NG are unable to deal with customer queries

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC4581522	CSS	2 - High	2019-09-09 08:28:00	2019-09-09 13:28:06	2019-09-11 14:24:28	176182	Disruption	Finance & Business Services (US) - CSS Client getting inventory file error in CSS. Advised client to : Workaround: 1. Click OK and the message will disappear. 2. The application Login screen will appear to allow you to log into CSS, CSS user ID and Password. 3. Verify your User Rights portion loaded successfully. 4. Once the you are logged in, another message will appear that says "one or more CSS part did not start, please call Helpdesk". click OK to make the message disappear. Client still getting error message. XXXXXXXXXX 730am-4pm 300 Erie Boulevard West Syracuse	US	Process gap in DP update and Package Content validation. Customer/Reputational Risk: We are frustrating customers with longer wait times, call handling time (see below) and increased customer transfers across most jurisdictions. Long wait times are driving customers to abandon calls resulting in repeat call backs and artificially increasing call volume. Customer frustration is being expressed through several channels; social media, escalated regulatory complaints, and executive outreach. Regulatory Risk: We have not yet incurred any regulatory penalties, but we have received inquiries from our MA and RI regulators. Our greatest regulatory risk is with our Electric Composite Satisfaction metric in RI (currently below target). We have secondary risks with service levels across all Jurisdictions where performance based on current trends would put us below target by year end. There are hundreds of agents who have been impacted with the "work around" for the subject incident and we allowed the P3 but today we discovered the BOTs were broken since Saturday which involves hundreds of critical customer facing transactions which expands the business impact to now be affecting hundreds if not thousands of our clients. We emphatically stated there is NO work around for the BOTs…they can't click through the screens that are popping up erroneously.
INC4722175	CSS	2 - High	2019-10-01 21:45:00	2019-10-01 21:45:07	2019-10-02 18:19:03	74036	Disruption	Finance and Business Services - CSS P2 FAULT - AGENTS WON'T BE ABLE TO SIGN IN TO CSS NAME: XXXXXXXXXX PHONE: XXXXXXXXXX USERS AFFECTED: 140++ users TIME OF FAULT: 09:00 PM Business Impact: Agents from the third-party vendor won't be able to sign-in to CSS. Called in to have a P2 ticket raised. Agents from a third-party vendor won't be able to login to CSS because of account errors. Help Desk, Please create a ticket for the attached users to be setup correctly for CSS . We need this routed to DXC XXXXXXXXXX From: XXXXXXXXXX Sent: Tuesday, October 1, 2019 11:29 AM To: XXXXXXXXXX Subject: FW: Vendor Agents not in AD From: XXXXXXXXXX Sent: Tuesday, October 1, 2019 11:08 AM To: Help Desk - Enterprise Support Center <HDESC@nationalgrid.com> Subject: FW: Vendor Agents not in AD	US	The Call Center Agent accounts were created using the New Hire process/form in SNOW, as they were required to have NG email. By doing so they went through the automated process and were not created properly for an external Call Center Agent. Call Center Agents have certain groups,OUs,access and should be created via a separate process. Third party vendor unable to log in to CSS. Additional users have been hired to deal with high call volumes. This has the potential for operational impact. Accounts will be created with the Active Directory NON Standard form List of Accounts will be sent to the UAM team for the proper access to be setup and email to be created.

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC4797234	CSS	2 - High	2019-10-12 03:00:00	2019-10-13 02:17:16	2019-10-23 01:47:31	862215	Disruption	F&BS (US) - Pitney Bowes Unable to retrieve CSS and CRIS Bill images from Pitney Bowes P2 Fault: Unable to retrieve CSS and CRIS Bill images from Pitney Bowes At this time, the known impact is as follows: - CSS accounts unable to view any PDF bill image via the web - CRIS Paperless bills PDF images normally delivered via e-mail on Saturday were not delivered -- CSS DOXO unable to retrieve PDF bill images directly from the vault -- CSS FISRV unable to retrieve PDF bill images directly from the vault # Source machine IP address NGUSWEBHCB002.na.ngrid.net 10.8.169.61 NGUSWEBHCB004.na.ngrid.net 10.8.169.62 # Destination machine (Pitney Bowes) ip address ng.e2vault.pb.com (199.231.35.163) ng.ebpp.e2vault.pb.com (199.231.35.25) Name : XXXXXXXXXX Email : XXXXXXXXXX Contact# : XXXXXXXXXX Location : Brooklyn MetroTech 5220 Critical Issue: yes Issue: - Called in regarding CSS	US	3rd Party Vendor, Pitney Bowes was affected by a malware attack that encrypted information on some systems and disrupted customer access to their services. Though they believed the issue was contained within their environment, NG's DR&S team blocked access to Pitney Bowes Customers cannot view a copy of their bill. They can still pay the bill if know the amount from the notification they received. Customers have not received their bill via email which could result in an increase in calls to our contact centre. Customers also have a period of time in which to pay their bill, which would need to be extended due to the delay in sending them their bill.
INC4959671	CSS	2 - High	2019-11-07 04:18:00	2019-11-07 04:18:23	2019-11-07 10:20:14	21711	Disruption	NSI - Finance and Business Services (US) - Upstate Mainframe Critical Issue? N Existing Ticket? Y Existing Ticket Number: INC4959671 Employee ID: XXXXXXXXXX First and Last Name: XXXXXXXXXX Email Address: XXXXXXXXXX Location: US Contact Number: XXXXXXXXXX Issue Description: Mainframe - Error Message -A caller called about an additional information - TPX Issue - Error Runtime,'User sign on already in progress' - Working fine earlier, but after logging in the user can't able to access the application - NY Mainframe - Closed and Open the application, also tried to use citrix application Minimum Data Set: a. Error message or problem: 'User sign on already in progress' b. Name: XXXXXXXXXX, XXXXXXXXXX c. Username: XXXXXXXXXX, XXXXXXXXXX d. Location: United States e. Phone number: XXXXXXXXXX f. Best time to contact: 4pm-10pm PST g. Email:XXXXXXXXXX,XXXXXXXXXX	US	As a result of multiple contacts not being available the resolution of the Incident was signficantly delayed.
INC4988976	CSS	2 - High	2019-11-12 00:01:00	2019-11-12 01:08:47	2019-11-12 15:32:29	51822	Disruption	NSI - Finance and Business Services - CSS CSS AGS Production Server (NATAPPNWH015) Web Instance is down and we are getting failure alters for this server. NATAPPNWH015 [Ping]: success NATAPPNWH015 [AGS Web]: 19661 NATAPPNWH015 [AGS IVR]: success NATAPPNWH015 [AGS GBE]: success The issue started on 12th November around 00:01 AM. In order to fix this we need to restart the server.	US	

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC5006284	CSS	2 - High	2019-11-13 08:30:00	2019-11-13 10:31:31	2019-11-14 00:43:55	51144	Disruption	Finance & Business Services – CSS (Citrix) Finance & Business Services - CSS - Intermittent - Disruption	US	It was found that address server NATAPPNWH017 has quite less load as compared to other three servers.So Server team would be verifying the underlying cause of this issue. Intermittent nature of the incident is impacting users across multiple locations
INC5241039	CSS	2 - High	2019-12-11 17:11:01	2019-12-11 17:11:27	2019-12-11 22:39:56	19709	Disruption	Finance & Business Services – CSS • What is the problem? No error mesage, the application just crashed and not responding • What application or service is affected? CSS Application • When did, the outage start? 4pm • When did it last work? around 3pm • How many users effected? whole teams, entire sites? 14 users that are affected • What is the business impact? Cannot take phone call to assist customers	US	NCI Contact Centre and IQOR experienced a degraded performance.
INC5361759	CSS	2 - High	2019-12-29 02:20:00	2019-12-29 02:24:22	2019-12-29 10:37:20	29578	Disruption	NSI - Finance and Business Services - CSS(Batch) CSS batch is on hold- DXC Support team required to check server status. CSS batch is on hold, a non -mainframe job from previous generation of daily batch delayed and is holding today's CSS batch. reason for delay is CN* jobs failed to connect to the server NHCBP71B. jobs: CN762DPD,CN761DPD,CN751DPD,CN743DPD,CN724DPD,CNCS003. Need server support team to immediately check the server.	US	
INC4145895	CSS	2 - High	2019-07-02 13:41:02	2019-07-02 13:41:02	2019-08-08 00:50:36	3150574	Degradation	USCB - Citrix (CSS) a. Affected Application or Service, Workgroup affected and location(s)? CSS b. What task are you trying to perform in the system: all functions c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? just her area d. When did this work the last time for you? CSS worked five minutes ago e. Requestor's name and job position: XXXXXXXXXX / senior supervisor f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact – phone number available 24/7 if possible: XXXXXXXXXX h. Is this a total loss of service or performance degradation? total loss i. Can you perform your task in another way or through another system for a limited time? no j. What is the business or goodwill impact on NG? business	US	Monitoring team missed an alert in the ESP tool. DXC Operations/Monitoring team have updated their process to identify these issues. Process with the swivel chair has been reviewed with DXC.
INC4737094	CSS	1 - Critical	2019-10-03 11:35:22	2019-10-03 11:35:22	2019-10-03 22:59:06	41024	Disruption	CSS not working a. Affected Application or Service, Workgroup affected and location(s)? CSS is freezing and shutting down Syracuse Erie Blvd 5110 30 + users b. What task are you trying to perform in the system: Trouble shoot. c. Is this issue only impacting you to your knowledge or also other departments, sites or regions? Atlanta d. When did this work the last time for you? 10 mins ago e. Requestor's name and job position: XXXXXXXXXX Supervisor f. Requestor's contact phone: XXXXXXXXXX g. Please provide alternative contact ? phone number available 24/7 if possible: n/a h. Is this a total loss of service or performance degradation? Total loss i. Can you perform your task in another way or through another system for a limited time? No they can not. j. What is the business or goodwill impact on NG? Can not access accounts.	US	Verizon completed investigation on the IPSEC termination points and found no tunnel flaps. Healthchecks were completed at a network level and no issues found. There are 100+ VPNs termnating on the devices and there was no additional impacts seen during this period. SOC theorised that this was a likely issue in the internet close to destination of the IPSEC VPN

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC4841285	CSS	2 - High	2019-10-12 03:00:00	2019-10-18 12:15:16	2020-06-20 21:13:10	21286674	Disruption	F&BS (US) - Pitney Bowes Unable to retrieve CSS and CRIS Bill images from Pitney Bowes P2 Fault: Unable to retrieve CSS and CRIS Bill images from Pitney Bowes At this time, the known impact is as follows: - CSS accounts unable to view any PDF bill image via the web - CRIS Paperless bills PDF images normally delivered via e-mail on Saturday were not delivered -- CSS DOXO unable to retrieve PDF bill images directly from the vault -- CSS FISRV unable to retrieve PDF bill images directly from the vault # Source machine IP address NGUSWEBHCB002.na.ngrid.net 10.8.169.61 NGUSWEBHCB004.na.ngrid.net 10.8.169.62 # Destination machine (Pitney Bowes) ip address ng.e2vault.pb.com (199.231.35.163) ng.ebpp.e2vault.pb.com (199.231.35.25) Name : XXXXXXXXXX Email : XXXXXXXXXX Contact# : XXXXXXXXXX Location : Brooklyn MetroTech 5220 Critical Issue: yes Issue: - Called in regarding CSS	US	3rd Party Vendor, Pitney Bowes was affected by a malware attack that encrypted information on some systems and disrupted customer access to their services. Though they believed the issue was contained within their environment, NG's DR&S team blocked access to Pitney Bowes Customers cannot view a copy of their bill. They can still pay the bill if know the amount from the notification they received. Customers have not received their bill via email which could result in an increase in calls to our contact centre. Customers also have a period of time in which to pay their bill, which would need to be extended due to the delay in sending them their bill.
INC4936695	CSS	2 - High	2019-11-04 12:43:39	2019-11-04 12:43:39	2019-11-06 03:28:00	139461	Disruption	User details: XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX Affected Application or Service, Workgroup affected and location(s)? Augusta & San Antonia Number of users: 100 or more users What task are you trying to perform in the system: We use it to access customer information and any notes left by the customer Is this issue only impacting you to your knowledge or also other departments, sites or regions? Unsure When did this work the last time for you? 9:00 AM EST | 4 hours since incident occured Requestor's name and job position: XXXXXXXXX, Supervisor Requestor's contact phone: XXXXXXXXX Please provide alternative contact ? phone number available 24/7 if possible:	US	
INC5041056	CSS	2 - High	2019-11-18 19:12:58	2019-11-18 19:12:58	2019-11-19 08:11:01	46683	Disruption	US Customer Business ? CSS (HCB XP machines) Ref ticket INC4966667, Effecting 12 Win XP computers at HCB3 dispatch computers original error was "The text for message number: 27513, could not be found". Updated to 5.86 and ran proxy fix new error " One or more CSS (production)components could not b started". used CSS fix from Ned at tech bar. Still getting new error about being started. This has a P2 out for it	US	It was found that address server NATAPPNWH017 has quite less load as compared to other three servers.So Server team would be verifying the underlying cause of this issue.

Number	Configuration Item	priority	Impact Start Time	Begin	End	Impact Duration (seconds)	Type	Description	Affected Region	Root Cause
INC5241240	CSS	2 - High	2019-12-11 18:16:24	2019-12-11 18:16:24	2019-12-12 03:19:14	32570	Disruption	Finance & Business Services – CSS • What is the problem? No error mesage, the application just crashed and not responding • What application or service is affected? CSS Application • When did, the outage start? 4pm • When did it last work? around 3pm • How many users effected? whole teams, entire sites? 14 users that are affected • What is the business impact? Cannot take phone call to assist customers	US	NCI Contact Centre and IQOR experienced a degraded performance.

Date of Request: September 2, 2020 Request No. DPS-486
Due Date: September 14, 2020 NMPC Req. No. NM-527

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Chelsea Kruger

TO: National Grid, Shared Services Panel

SUBJECT: Shared Metering

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

For each of the last five calendar years, provide the number of employees who worked in the Company's shared meter investigation unit.

a. Include in your response the list of duties undertaken by these employees.

b. Provide a detailed explanation as to any decreases/increases in the number of employees.

Response:

a.

Calendar Year	Number of Employees	Responsibilities
2020	3 represented employees 2 management employees, oversight and support (supervisor and analyst)	• Answer shared metering hotline phone calls • Review requests Work Flow Managers ("WFMs") • Send letters to customer and landlord • Schedule field investigation appointments and supply the investigation paperwork • Upon receipt of the completed paperwork, review to determine the case output • Based on case output, calculate usage to determine credit/debits • Assist in PSC requests

Calendar Year	Number of Employees	Responsibilities
		• Manage the case tracking in a centralized tool
2019	8-9 represented employees (until Aug/Sept 2019) 1 management employee, oversight and support (supervisor)	• Answer shared metering hotline phone calls • Review requests (WFMs) • Send letters to customer and landlord • Schedule field investigation appointments and supply the investigation paperwork • Upon receipt of the completed paperwork, review to determine the case output • Based on case output, calculate usage to determine credit/debits • Assist in PSC requests
2018	9-10 represented employees 1 management employee, oversight and support (supervisor)	• Answer shared metering hotline phone calls • Review requests (WFMs) • Send letters to customer and landlord • Schedule field investigation appointments and supply the investigation paperwork • Upon receipt of the completed paperwork, review to determine the case output • Based on case output, calculate usage to determine credit/debits • Assist in PSC requests
2017	7-8 represented employees 1 management employee, oversight and support (supervisor)	• Answer shared metering hotline phone calls • Review requests (WFMs) • Send letters to customer and landlord • Schedule field investigation appointments and supply the investigation paperwork • Upon receipt of the completed paperwork, review to determine the case output • Based on case output, calculate usage to determine credit/debits
2016	7 represented employees 1 management employee, oversight and support (supervisor)	• Answer shared metering hotline phone calls • Review requests (WFMs) • Send letters to customer and landlord • Schedule field investigation appointments and supply the investigation paperwork • Upon receipt of the completed paperwork, review to determine the case output • Based on case output, calculate usage to determine credit/debits

b. 2016-2018: Staffing was increased during this time period to address concerns around the quality of work the Shared Metering unit was performing. During this time period, there was a backlog of work that needed to be cleared.

2019-2020: Staffing was decreased during this time period because of the implementation of process improvements, such as the introduction of an electronic tool that helped eliminate handoffs and manual processing. The new tool can track and calculate shared metering cases more efficiently, reducing the need for additional resources to support.

Name of Respondent: Joshua Karpinski

Date of Reply: September 14, 2020

Date of Request: September 10, 2020 Request No. DPS-582
Due Date: September 21, 2020 NMPC Req. No. NM-641

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, John Sheevers

TO: National Grid, Shared Services Panel

SUBJECT: Submetering – Application of Service

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. Provide the Company's current procedures for a residential multi-family building requesting electric service that outlines requirements for the building to receive electric service under each of the following scenarios: a) where units in the building will be direct-metered by the Company; and, b) where the building will be master-metered with submeters. Include documentation of procedures.

2. For scenario 1b above, provide the tariff service class (SC) for residential electric submetered buildings. If there are multiple service classes available for such buildings, provide the criteria for each.

Response:

1(a-b). Upon receipt of a request for electric service to a multi-family building, the Company's customer-facing Connections team follows a standard procedure for processing service requests. The requestor is asked a series of questions, including intended use of the service. The building use and number of requested meters are determined during initial order creation and will also provide an indication of a potential multi-family building. When the requestor indicates the use to be a multi-family building or multiple meters are requested at a single location, the Connections team will review the service details of the request, the building use, and the type of construction with the service requestor. Master metering will also be discussed. If there is any indication that the requestor wishes to pursue a master metered configuration, the Connections team member will advise the requestor of the applicable regulations, including the requirement to petition the

Commission for approval. The Connections procedure and training documents are provided in Attachment 1.

2. The Connections team will utilize Attachment 2, to assign the appropriate service classification. Note it is the total load provided that determines the applicable service classification for the master metered account based on the Company's electric tariff. Due to the master-meter configuration, SC-1 and SC-1C would not be applicable as the master metered service does not qualify for a residential rate based on the service classification applicability.

Name of Respondent: Kristen Cobb

Date of Reply: September 21, 2020

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PROCEDURE DETAIL

1. Summary

Procedure Name	Package Job – Commercial Job Owners
Description of Procedure	This procedure will assist the Commercial Job Owners to properly progress a customer's work request, discuss details of the project with the customer and/or contractor, and assist in assignment of work request requirements, requirement due dates and packaging the job for Design. This procedure will be used to document the process from the time a STORMS work request is auto-initiated to the point where a hand-off to Design is made.
References	Need Date Guidelines STORMS Job Types NE PES Package, NY PES Package Diversified Load Sheet Minimum Information Needed for Design NY Chargeable Work Electric, NE Chargeable Work Process Temporary Service Request-NE Due Date Setting Validate Billing Determinants Meter Work Only Handling Notifications and Date Management Strategy
Procedure Owner	Customer Fulfillment/Regional Account Services

2. Pre Conditions

Conditions
• Customer work request has been initiated in CSS. • Work request auto-initiated in STORMS, **and are then assigned to the applicable job owners by an Order Processing Representative**

3. Base Flow

Step	Role	Step Name	Step Description *(Explanation)*
1	OP Rep	Initiate & Assign the work	NE/NY Work is initiated in CSS by CF Order Processing. Work requests will be assigned based on the nature of the work. Work that is not a potential fast track candidate will be assigned to a CF Commercial Rep, Complex Rep (NE) or an RAS Manager (NY) who will reassign to and RAS Rep per area assignment/complexity.
2	Job Owner	Monitor queue	Monitor STORMS work queue throughout the day. New work shows up in the in-box section of the work queue. All new work, notifications, and dates should be managed and acknowledged daily. Representatives should attempt

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			to empty their inbox prior to end of day.
3	Job Owner	Review WR	On each new ESO, review the comments and the service details tab to determine the scope of work. Call the provided contact and then add the primary point of contact's name and phone number to the "Contact Name" and "Tel" fields of the General tab, if not already populated. Also add the email to the Associated Parties tab, if not populated.
4	Job Owner	Determine if the Account is Managed	If customer is an ESS managed account contact the appropriate ESS Account Executive by referring to NG Internal Contact List (NE). If it is a managed account for NY, the job should be assigned to an RAS manager. • If job is assigned to CF Complex Rep or RAS rep, manually add 120R and complete it.
5	Job Owner	Call Requestor	If the customer/contractor is not available, but you left a message, add a 104 requirement to the job and set the due date out 5 days. Add a COFG remark to the WR, stating you attempted to contact the electrician/customer. If the customer calls back complete the 104 and progress the job. If you receive the overdue notification for the 104 and the customer has not called back yet, try calling the customer again, and add an additional remark. • Contact the Customer/Contractor to obtain information needed according to Minimum Information Needed for Design • Inform customer if potential CIAC Review NY Chargeable Work Electric, NE Chargeable Work • Inform the customer that you will be their point of contact going forward. Provide the customer with your direct phone number. • Check the required by date and set customer's expectation of minimum time frame for earliest completion date according to Need Date Guidelines
6	Job Owner	Temp Service Billing	**NE Only**: If the job is for a temporary service, refer to Process Temporary Service Request-NE. Continue with this procedure after completing the Process Temporary Service Request procedure.
7	Job Owner	Assign WR Type and Job Type in STORMS	Select WR Type and Job Type according to STORMS Job Types If a job is determined to be meter work only, progress it

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			using the support aid: Meter Work Only **IMPORTANT:** If a job is suspected to be Meter Work Only, but it does not qualify for temple design, set Job Type to **DSERVMTRO, and DO NOT CHANGE THE WR TYPE FROM NON-CONSTRUCTION**. Manually add optional requirement R298 to the job with a note to Designer. When design reviews the job, if it is meter work only, they will complete the job. If it is not meter work only they will email the job owner once they have selected the job type, so the job can be managed. ***Exercise caution when making this decision because the WR will need to be recreated from the start if any line work is needed. See a Supervisor/Manager if necessary.* For small commercial services where it is clear that the scope of work is maintenance only (no service drop replacement – other capital work), Order Processing can progress this through the design cycle as fast track using job type DSERVMAINT. When in doubt, progress to Design as DESIGNED, DSVCCOM. Distribution Design can always change the job type to DSERVMAINT before financials are pulled. For work that requires only a planned outage and no capital work for National Grid crews, follow the procedure for a planned outage. For commercial ESOs, select the work type as DESIGNED and the job type as DSVCCOM. The default requirements for the job will now be set.
8	Job Owner	Request Info - Send out PES package	Mail/email the PES package, if needed. Include the department sanctioned PES email, a link to the National Grid Electric Installation Specifications, the applicable forms, checklists, and bulletins unique to the job scope. NE PES Package, NY PES Package If the full PES package is not required, but it is apparent an easement will be needed, send the customer an easement application. Update the 182R to partial and set the due date out 2 weeks for a reminder. After the PES package/easement application is sent, complete the 181R. If the job is 200amp 120V/240V service or smaller and no construction is needed, update the 181R and 182R to not required and skip to step 13.

9	Job Owner	Receive Info - Assess loads and one-line diagram	Assess the load information and one-line diagram. Verify that the correct meter configuration is being planned and built (hot vs. cold sequence). Verify that the number of meters and meter socket sizes matches what is requested in STORMS, confirm the number of accounts set up in CSS, with their corresponding unit identifiers. Load data must be acquired for all services larger than a 200 amp 120V/240V and all three phase services. Loads must be diversified using the Diversified Load Sheet . • Update STORMS summer/winter load information on the Service Details tab. The 233R will automatically be added and assigned for the Engineering Study when loads are added and over 200kW. • Update the connected/diversified load details on the Electric tab (NY). *Loads should be broken out by meter for all complex metering applications.* A 232R One-line approval must be manually added for any services 400amps or larger (NY Central only) Customer's rate must be verified in CSS. Refer to Validate Billing Determinants. Take a screenshot of rate and revenue classification, attach to documents tab. (***necessary as a result of audit***)
10	Supervisor or Manager or Team Lead	Approve loads and CSS Rate	▪ Review load sheet and customer provided loads ▪ Verify loads are added to STORMS Service Details tab and the Electric tab ▪ Verify CSS Rate is correct. ▪ Add COFG Remark loads are approved and rate is accurate. (***necessary as a result of audit***)
11	Complex Job Owner	Site Visit	If necessary, meet with the customer to discuss work scope and any required payments/easements or answer any customer questions.
12	Job Owner	Complete 182 Requirement	When all the required information for Design has been obtained and approved, complete the 182R. Refer to Minimum Information Needed for Design for required information needed to send a job to Design and for when the 182 should be set to Partial. In NE, for a WR where a CIAC is required, a Load Estimator must be created before completing the 182R.
13	Job Owner	Assign 245R and 608R if required	In cases where complex metering will be required (meter socket sizes greater than 400A): ▪ Assign the 245R to the Meter or M&T Supervisor/tech for the area and add an appropriate requirement due

			date ▪ Add 608R from the optional requirements list and assign to the same Meter or M&T Supervisor ▪ When you have a job that will require an M&T CT rated meter, assign the 245R to the M&T supervisor/tech, add a date 5 days out. Then for NY only, add a note in comments & under DSGE remarks in CAPS **"DESIGN- - PLEASE INCLUDE M&T IN CUSTOMER ONSITE MEETING"**. ▪ M&T should be included in all customer site meetings with Design.
14	Job Owner	Design Appointment Requested	If the customer has requested a Design appointment, add the 208R and date it 3 days out. Verify the primary point of contact's information has been added to the contact field of the General tab. A comment should also be added, requesting a field meeting with the electrician.
15	Job Owner	Scan necessary paperwork, obtain electronic files and attach to WR	Scan and attach any files required to Documents tab in STORMS, this includes the customer's load sheet, CSS screenshot, one-line diagram, site plan, and property information. Refer to the Minimum Information Needed for Design. For scanning/attaching documents, refer to Scan and Send Documents via Email If the Developer/ Electrician supplies a Site Plan (CAD map), the site plan must be submitted to Maps & Records and Design: Scan plans to GIS Situations in which an electronic copy of the site plan cannot be obtained will be handled on an individual basis. The Job Owner will coordinate these jobs between themselves, the developer, and Design.
16	Job Owner	Set the 226 & 298 requirement due dates, assign 298R	Set the 226R and 298R due dates using Due Date Setting. When assigning the due dates, do not count weekends or company holidays as working days. Assign the 298R to **Design_NY** or **Design_NE**. Verify that the WR is in status 20. Do not assign the 226R to Design, only adjust the date.
17	Job Owner	Assess Required by Date	Reassess the required by date using Handling Notifications and Date Management Strategy and adjust as appropriate. Set the new expectation with the customer.

5. Process Alternative 1:

Step	Role	Step Name	Step Description *(Explanation)*
1			

6. Amendment History

Version	Author	Description	Date

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1.0	John Sumner	Original	02/06/09
2.0	Dave Cardoza	Added 104 rqmt delay procedural steps	03/23/09
3.0	Margaret Jeffers	Edited Step 12 to include Site Plan steps	04/10/09
4.0	Margaret Jeffers	Edited Step 5 to include commenting related work requests. Edited Step 6 to include details for Meter Work Only jobs.	04/16/09
5.0	Margaret Jeffers	Updated role names, added a hold after adding the 104 until the job is ready to be sent to design and updated the name of the	06/01/09
6.0	Margaret Jeffers	Added a step to address the 182 requirement. Re-ordered steps to add a 104 prior to assigned to design	06/24/09
7.0	Margaret Jeffers	Added Regional Alternative 1.6.1 to address muni inspections in the Lebanon area	06/26/09
8.0	Margaret Jeffers	Added reference to procedure Process Temporary Service Request	07/08/09
9.0	Margaret Jeffers	Updated towns listed as having wire inspectors in Lebanon NY Regional Alternative	10/23/09
10.0	Margaret Jeffers	Added link to SA: Due Jeopardy Date Setting and updated RI temp service fee	02/16/10
11.0	Kathy Moar	Changed step 4 in Alternative 1 to refer to Need Date Guidelines	03/29/10
12.0	Dave Cardoza	Rewrote to improve flow. Added new steps to Process Alternative 1.7.1 to accommodate the by-passing of Design research for simple services	04/07/10
13.0	Dave Cardoza	Added small steps to account for use of the old Design work diary in STORMS	04/20/10
14.0	Dave Cardoza	Modified to reflect COF agreement with Design to pass residential service upgrade work to them as DESG, DSERVCEEXT	05/28/10
15.0	Margaret Jeffers	Added sub-step to use the Request Meter Order form if the scope of meter work changes. Also, added details related to the 181 and 104 requirements.	6/24/10
16.0	Joe Curley	Changed job owner of associated WR from DWYERJ to AWR_DSCHED	7/16/10
17.0	Joe Curley	Added step for DSERVCNEW with specific instructions for URD	7/24/10
18.0	Sean Nye	Updated Base Flow and Alternatives to reflect change in Design Scheduling for all areas.	11/03/10
19.0	Kathy Moar	Modified Alternative Process for services within a URD	12/09/10
20.0	Dave Cardoza	Split out procedure by role for Connections Rep and major re-draft	01/19/10
20.1	Sean Nye	Base flow step 10, modified 182 requirement to be set to Partial rather than Bypassed.	02/11/11

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21.0	Dave Cardoza	Clarified commercial meter work only and other small changes	04/21/11
22.0	Dave Cardoza	Modified to reflect order initiation in OP in NE	4/25/11
23.0	Dave Cardoza	Updated to reflect Design Scheduling procedure change	08/24/11
24.0	Liam Boesel	Updated to add CF/RAS Supervisor approval of loads and rate (necessary per an audit)	09/17/14
25.0	Tracy Bolduc	Updated to Job Owner, added new steps 11 & 17, updated links	03/02/15
26.0	Tracy Bolduc	Added PES Package and Load Sheet links	04/10/2015
27.0	Tracy Bolduc	Added MWO step back in to procedure	05/22/2015
28.0	Tracy Bolduc	Updated step 8	03/25/2016

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Metering Requirements for Multiple Occupancy Buildings

May 2019

Safety Message

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Family Emergency Plan

The National Safety Council recommends every family have an emergency plan in place in the event of a natural disaster or other catastrophic event. Spring is a great time to review that plan with family members. Have a home and car emergency kit.

The Federal Emergency Management Agency says an emergency kit should include one gallon of water per day for each person, at least a three-day supply of food, flashlight and batteries, first aid kit, filter mask, plastic sheeting and duct tape, and medicines. Visit the FEMA website for a complete list.

The emergency plan also should include:

- A communications plan to outline how your family members will contact one another and where to meet if it's safe to go outside
- A shelter-in-place plan if outside air is contaminated; FEMA recommends sealing windows, doors and air vents with plastic sheeting
- A getaway plan including various routes and destinations in different directions

Multiple Occupancy Buildings

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Policy: Multiple occupancy buildings of four (4) or more individual dwelling units built after 1977 are required to individually meter each unit. *However, there is an exemption to this requirement in Rule 8 of the Tariff related to Assisted Living and Senior Living Facilities.*

**Facilities that are exempt from the individual metering requirement and are master-metered do not fall under Rule 16 for CIAC purposes. Either Rule 21 (service lateral) or Rule 17 (UCD) would apply for CIAC purposes.*

Tariff Rule 1.19.6 Multiple Occupancy Building Definition: A structure, including row houses, enclosed within exterior walls or fire walls, which is built, erected and framed of component structural parts and is designed to contain four or more individual dwelling units for permanent residential occupancy.

Tariff Rule 3.4 General Information Limitation of Service Offer: Each dwelling unit, in a residential multiple occupancy building must be individually metered if the internal wiring was not completed prior to January 1, 1977. After this date, the practice of including the electric bill as part of the rent is **prohibited** for new residential dwelling units. ***Master metering of such buildings may be permissible when each dwelling unit is sub metered pursuant to Rule 8.***

Assisted & Senior Living Facilities

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Policy: A qualified Senior Living facility is a facility that provides ***additional services that distinguish it from a typical complex***, such as dining options.

A qualified Assisted Living Facility is a facility that provides congregate residential housing with supportive services, including on-site monitoring, and personal care services and/or home care services in a homelike setting. As stated above, qualified Senior Living Facilities and Assisted Living Facilities are exempt from the individual metering requirement and may be master-metered upon request.

**If the facility fits within the definition of a qualified Senior Living Facility or Assisted Living Facility, CIAC charges would be assessed under either Rule 21 or Rule 17.*

If the facility installs master metering, and thereafter elects to convert the facility to a different use and no longer meets the criteria, the customer shall petition the Commission for approval of an appropriate means of receiving electric service. All costs associated with a conversion from master metering shall be the responsibility of the customer.

Rule 8.5 – Assisted Living and Senior Living Facilities

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8.5 Assisted Living and Senior Living Facilities

8.5.1 Pursuant to the Public Service Commission's Memorandum and Resolution Adopting Residential Electric Submetering Regulations in Case 11-M-0710, issued and effective December 18, 2012, new and existing assisted living and senior living facilities may elect to master meter or convert to master metering, subject to Rule 47.

An assisted living facility shall mean a multi-unit residential premise, identified as an assisted living facility and certified by the New York State Department of Health as such, which provides congregate residential housing with supportive services, including on-site monitoring, and personal care services and/or home care services in a homelike setting. An assisted living facility must meet this definition to be eligible for the exemption from the requirement that its facility be individually metered.

A senior living facility shall mean a multi-unit residential premise in which energy-efficient housing and other services are provided, and will be provided in the future, to resident senior citizens, in which electric usage does not vary significantly from unit to unit because units are uniform in size and in the types of appliances, and which promotes economic development. A senior living facility must meet this definition to be eligible for the exemption from the requirement that its facility be individually metered.

If an assisted living or senior living facility as defined in this Rule installs master metering, and thereafter elects to convert the facility to a different use and no longer meets the criteria stated above, the customer shall petition the Commission for approval of an appropriate means of receiving electric service. All costs associated with a conversion from master metering shall be the responsibility of the customer.

Rule 8.4 – Existing Direct Metered Multi-Unit Residential Premises

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Policy
Existing multiple occupancy buildings with individual metered **cannot** convert to master metering unless they file a petition with the Commission as outlined in Rule 8.4.

Tariff
8.4 Existing Direct Metered Multi-Unit Residential Premises

8.4.1 Except as otherwise provided in 16 NYCRR Part 96, electric service provided to individual residential units in existing multi-unit residential premises through direct metering may not be discontinued or replaced by master metering. If, however, the customer files a petition to submeter with the Commission, which (1) complies with the applicable requirements of 16 NYCRR § 96.3(b) and (2) demonstrates that the building or complex for which master metering with submetering is sought will participate in building level demand response programs or will employ on-site cogeneration plant or an alternative, advanced energy efficiency design, the conversion to submetering may be sought from the Commission. All costs associated with a conversion to master metering shall be the responsibility of the customer.

College Dormitories and Apartments

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Background

Effective as of August 1976, the New York State Public Service Commission prohibited master metering in new construction of multiple occupancy buildings and required that any new facilities be individually metered. Subsequent to that date, any newly constructed or renovated multiple occupancy buildings that desire to master meter must file a petition with the Commission for exception from the rule. The prohibition on master metering was enacted, in part, to facilitate the Commission's policy objectives of sending accurate price signals to customers and conserving the State's energy resources.

With expansion and construction on college campuses, National Grid has been approached regarding how to meter college dormitories. Some new dormitories are being constructed in the style of an apartment, while others still remain in the format of student rooms serving as mere sleeping facilities with common bathrooms and dining facilities. Additionally, off-campus complexes are being developed as "student housing" and constructed in apartment-style configurations. The varying styles of construction have led to questions regarding the definition of "dwelling unit" as used in the context of multiple occupancy buildings and the type of metering permitted in the various dormitory/student housing configurations.

College Dormitories and Apartments

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Policy – assuming customer is requesting new electric service for the following scenarios

Dormitory Constructed as a "Sleeping Space" with Common Dining and Bathroom Facilities Located on a SUNY Campus
The facility **may be master metered without Commission approval**. If the facility elects to submeter, it must file petition with the Commission.

Dormitory Constructed as a "Sleeping Space" with Common Dining and Bathroom Facilities Located on a non-SUNY Campus (Private Universities)

The facility **may be master metered without Commission approval**. If the facility elects to submeter, it must file petition with the Commission.

Dormitory Constructed as an Apartment with Kitchen and Bathroom Facilities Located on a SUNY Campus
(including community colleges)
The **NYS Dormitory Authority ultimately has jurisdiction** to decide the appropriate facilities for use in this context and has the discretion to determine whether it will master, individually or submeter the facility.

Dormitory Constructed as an Apartment with Kitchen and Bathroom Facilities Located on a non-SUNY Campus (Private Universities)
This type of housing is subject to the jurisdiction of the Commission and must be either individually or sub metered. The recent petitions of City Station LLC and United Development Corporation may be used for reference. If the facility wishes to master meter, it must **file a petition with the Commission for approval.**

Student Housing Owned by a Third-Party Developer, Whether On or Off-Campus
This type of housing is subject to the jurisdiction of the Commission and is required to be either individually or sub metered. The recent petitions of City Station LLC and United Development Corporation may be used for reference. If the facility wishes to master metered, it must **file a petition with the Commission for approval**.

Connections Responsibility

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What you need to know/do:

- Ask questions – what is the building being used for? Who is the customer?
- How many meters are on the request?
- Does the customer/applicant meet the requirements to Master Meter?
- National Grid has NO POSITION, this is a PSC Ruling
- If a customer **IS** petitioning the PSC, make sure to place appropriate pre-construction holds until a decision by the PSC has been made. We should obtain a copy of the initial petition from the customer. We should share that information/copy with the Customer Facilities Engineer (and Community Manager if appropriate) for review and determination if NG would like to comment on the petition. (FYI, NG typically does not provide comment, but there may be instances where we have a position against the request)
- Attach the approval to the Documents Tab and a Remark referencing the Case Number, Approval Date (this is searchable on the PSC Webpage)
- If the customer/applicant meets the criteria and qualifies as a Nursing Home or Senior living facility, we should document supporting evidence

Non-Standard Electric Connections

Multiple Occupancy Buildings
December 2019

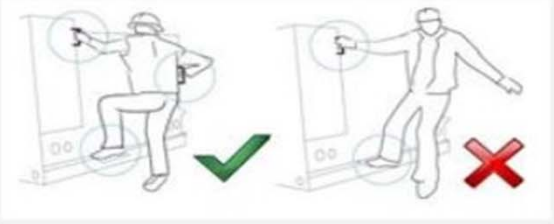
nationalgrid

Guiding Principles of Safety: 3 Points of Contact

How to Use 3 Points of Contact:

When entering or exiting a vehicle:

- Use 2 hands + 1 foot, or 2 feet + 1 hand while entering and exiting all vehicles. Always remember:
  - ⇒ Use handrails or handles on the vehicle, if available.
  - ⇒ If a grab bar is not available, grip the seat or another fixed object.
  - ⇒ Don't grab the steering wheel unless it is in the "locked" position; it can turn suddenly and throw you off balance.
  - ⇒ Don't grab the door or handle; it could swing out causing you to fall.
  - ⇒ Never jump from a vehicle. Jumping multiplies the force on your joints and creates much more of a chance for slips or falls.



When climbing ladders:

- Always use 3 points of contact on a ladder and remember to keep hands free, when possible, by securing tools in a tool belt around your waist and hoisting larger tools in an approved container.
- Remember this off the job as well— particularly this time of year whether climbing a ladder to clean gutters or put up and take down holiday decorations.

When using stairs:

- Always use both feet when going up or down stairs and keep one hand free so that you can firmly hold the handrail.
- Avoid carrying large objects that can block your vision.

Definition

What defines a Multiple Occupancy Building?

- ✓ **A multiple occupancy building is defined as a building with 4 (or more) residential apartments.**
- ✓ **A multiple occupancy building may be a mixed use building (non-residential units), but if has 4 (or more) residential units, will be considered a Multiple Occupancy Building.**

What does this mean to Non-Standard Electric Connections?

In order to develop our flat rate cost, we need to include the costs for Multiple Occupancy Buildings as long as the criteria below is required to provide the building with service:

Will the new service being requested require a NEW pad mount transformer?

If the answer is YES – then you will need 2 Work Requests. A DURD (infrastructure order) AND a DSVCCOM (Connect & Meter Set order)

Reference Sheet

New Multiple Occupancy Building

Overhead

	DSVCCOM Order	
	RAS	Connections
Managed Account	x	
Non-Managed Account		x

******Job Owner to calculate CIAC******

Underground

	URD Order (Infrastructure)		DSVCCOM Order (Connect & Meter Set)	
	RAS	Connections	RAS	Connections
Managed Account	x		x	
Non-Managed Account Less than 2000 Amps	x			x
Non-Managed Account 2000 amps or greater	x		x	
	*****Connections URD Rep to calculate CIAC*****		*****Job Owner to complete 461 - No cost to connect*****	

Managing the Work

Typically the request for a MOB will be received in the Connections Group. Once it is identified that a corresponding URD order is needed, the Connections Representative will create the URD order and assign to the RAS Manager and the initial order will become the DSVCCOM (set & connect for meters).

*******IT IS VERY IMPORTANT TO USE THE INITIAL ORDER FOR THE SET & CONNECT AS THAT ORDER IS CONNECTED TO ACCOUNTS IN CSS*******

NEW YORK	Rate	Meter	Supplier	Availability
Residential	SC-1	kWh	Company or ESCO	Residential use only, includes farms when metered through home, 1 phase only. Churches and religious organizations, Veterans posts & Mental Hygiene Law, 1 phase or 3 phase
	SC-1C	kWh – TOU	Company or ESCO	Residential Time of Use, 1 or 3 phase service
Small General Service*	SC-2	kWh	Company or ESCO	< 2000 kWh/month, non-residential end use, including garages, barns separately metered from residence, discount for primary metering and customer owned transformer, requires Form C if primary metered or customer owned transformer
	SC-2D	Demand	Company or ESCO	> 2000 kWh/month AND < 100 kW, discount for primary metering and customer owned transformer, requires Form C if primary metered or customer owned transformer
Large General Service **	SC-3	Demand/Interval	Company or ESCO	≥ 100 kW BUT < 2000 kW, discount for primary metering and/or customer owned transformer, delivery voltage specific discount, requires Form C
Large General Service	SC-3A	Interval	Company or ESCO	> 2000 kW, discount for primary metering and/or customer owned transformer, delivery voltage specific discount, requires Form C
Residential – no discount for primary metering or customer transformer ownership				
**Small General Service – primary metering discount 3% on kWh; when customer also supplies transformer, discount of $0.90 per kW*				
***Large General Service – rkVA (reactive demand) charge for all customers metered monthly demand 500kW and over, see Tax Exemptions, interval meters are required on all accounts > 250 kW*				

For detailed explanation of Service Classifications please reference: NYS PSC 220 Electric Tariff

FOR QUICK REFERENCE ONLY NOT TO BE USED FOR IN DEPTH DISCUSSION

Date of Request: September 11, 2020 Request No. DPS-598
Due Date: September 21, 2020 NMPC Req. No. NM-657

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, John Sheevers

TO: National Grid, Shared Services Panel

SUBJECT: Submetered Online Rate Calculator

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

In the Order Authorizing Commercial Submetering and Requiring Rate Cap Bill Calculator issued February 20, 2013 in Case 12-E-0381, the Commission discusses the value of a readily accessible online rate cap calculator that provides accurate billing information and is available as a bill comparison tool for submetered end-users.

1. Does the Company currently have such an online rate calculator available on its general website that can be used as a residential bill comparison tool as described above? If so, provide the link.

2. If not, has the Company considered implementing a Rate Cap Bill Calculator as described in the above-referenced Commission Order for residential submetered end users? Provide details to any implementation efforts including, but not limited to, costs, timing, if it would be automated or require manual processes, and internal controls for bill accuracy.

Response:

1. The Company does not currently have a submetered billing calculator on its website.

2. Based on the relatively limited numbers of customers impacted by submetered rates across the Company's service territory, the Company believes that the costs of implementing and maintaining a submetered billing calculator will likely outweigh the potential benefits to this small subset of customers. Notwithstanding, DPS Staff recently reached out to the Company and requested that the Company conduct a preliminary analysis of the costs and feasibility of a implementing a submetered bill calculator. The

Company is currently in the process of completing that analysis and will supplement this response once the analysis is completed.

Name of Respondent:
Michele Wilder

Date of Reply:
September 21, 2020

Date of Request: September 14, 2020 Request No. DPS-646
Due Date: September 24, 2020 NMPC Req. No. NM-714

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Chelsea Kruger

TO: National Grid, Shared Services Panel

SUBJECT: Energy Affordability Program (EAP)

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. Provide the Company's processes and procedures for providing an Energy Affordability Program participant with a reconnection fee waiver.

2. Indicate if a single customer can receive multiple reconnection fee waivers, and explain any conditions for multiple reconnection fee waivers.

3. For each of the last three years, since the inception of the Energy Affordability Program, provide the number of EAP participants who received a reconnection fee waiver.

4. For each of the last three years, since the inception of the Energy Affordability Program, provide the number of EAP participants who incurred a reconnection fee.

5. Indicate how many of the customers identified in response to Question 4, above, did not receive any reconnection fee waiver.

Response:

1. A daily report, AD HOC JB 232 (Reconnect Fee Waiver Report), is prepared that contains a list of customers to be reviewed to determine if they should be credited with the turn off for non-payment (TONP) Reconnect Fee based upon current enrollment in EAP. Eligibility only applies to customers that have not received a prior waiver since 2/1/2011. The accounts on the report are manually reviewed to determine if the customer has received the one-time waiver previously and if so, they are not eligible for the credit. If they have not been provided with a prior credit, the credit is issued. A description of the process follows:

Once the Reconnect Fee Waiver Report (named AD HOC JB 232) is received, the Upstate NY EAP Team completes the following steps:

- Enter the account number in the UNY CSS customer system
- Verify if the account has ever received a credit for the Reconnect Fee.
  - The account is reviewed as far back as the CSS system allows.

- If no Reconnect Fee has been waived previously, the following process to credit the Reconnect Fee is performed:
  - Using Alt AARC (Action, Account Action, Account Receivable, Request Credit)
  - Click General
    - Add $50 as a credit (previously $47)
  - Double click Revenue Business
    - Chose CONP Electric (or CONP GAS if applicable)

Place the following note on the customer account: "Per PSC Rate case, please apply a 1x credit to waive reconnect fee."

2. This program allows for a one-time credit per customer account.

3. For each of the last three years, since the inception of the Energy Affordability Program, the number of EAP participants who received a reconnection fee waiver appears below (for 2020, only data through June 30, 2020 is available):

   - 2018 – 802 customers
   - 2019 – 951 customers
   - 2020 - 75 customers (January 1, 2020 – June 30, 2002)

4. For each of the last three years, since the inception of the Energy Affordability Program, the number of EAP participants who incurred a reconnection fee appears below (for 2020, only data through June 30, 2020 is available):.

   - 2018 – 9587 customers
   - 2019 – 9519 customers
   - 2020 – 100 customers (January 1, 2002 – June 30, 2020)

5. The number of customers identified in response to Question 4, above, that did not receive a reconnection fee waiver appears below.

- 2018 – 8785 customers
- 2019 – 8568 customers
- 2020 – 25 customers (January 1, 2020 – June 20, 2020)

Name of Respondent: Date of Reply:
Sherry Higgins/Kimberly Spaeth September 24, 2020

Date of Request: September 15, 2020 Request No. DPS-665
Due Date: September 25, 2020 NMPC Req. No. NM-737

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Kayla Whitaker

TO: National Grid, Information Technology Panel

SUBJECT: Legacy Customer Service System

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. For each of the last five years (2015, 2016, 2017, 2018, and 2019), provide a detailed description of all costs Niagara Mohawk Power Corporation d/b/a National Grid (NMPC) has spent to maintain its existing Customer Information System (CIS).

2. For each of the last five years (2015, 2016, 2017, 2018, and 2019), provide a detailed description of each instance in which NMPC has conducted a patch to address a deficiency in the CIS.

3. Provide the number of the Company's information technology personnel, including contractors, who have the technical background to address issues or outages related to the CIS.

4. For each of the last five years, provide a detailed description of employee attrition related to information technology personnel who have (or had) the expertise to work with the existing CIS.

Response:

1. Please see Attachment 1.

2. Accenture is responsible for the core software deliverables for CSS. To date, no patch requirement has been implemented or been needed for core issues related to Foundation Cooperative Processing.

Attachment 2 is a listing of Issue Tracking Tools that list 1,631 corrective actions that have been implemented for the period 2015 through the end of 2019. Details of the type of corrective actions are also listed. These types of changes can be associated with any area of functionality within CSS and be attributed to a specific deficiency requiring the corrective action.

3. National Grid's support model for CSS is provided under the Application Development Application Maintenance ("ADAM") Supplier Contract with IBM. This Supplier Contract is per service and not per full-time equivalent ("FTE"). The ADAM Contract with IBM does not call for a fixed number of Subject Matter Experts ("SMEs") for CSS support. IBM manages their volume of SMEs based on the current day to day flex model; which allows them to flex up and or down depending on the current demand and provide the services of knowledge of support for CSS. FTEs can change depending on the service work load for CSS. The count of FTEs within IBM that support CSS is currently 22. The individuals are aligned to functionality of CSS and could manage updates, issues, and/or outages related to CSS.

   Within National Grid Business Billing Operations there are approximately four to five individuals with technical knowledge of CSS that review issues and work with National Grid's Supplier, IBM and are dedicated resources.

4. Please see the response to question 3, above.

Name of Respondent: Date of Reply:
Daniel J. DeMauro September 25, 2020

Sum of CSS				Calendar Year					
Spend Type	Service Description	OrderID	Order Descr	2015	2016	2017	2018	2019	Grand Total
License	Software licenses to support	XC434014648	5110S-CSS Software	$ 348,873	$ 541,036	$ 163,498	$ 166,058	$ 188,283	$ 1,407,749
	the CIS application (i.e., Open	XC434017725	5110S-IS2628 VM - SAS NGUS			$ 117,812	$ 123,599	$ 160,952	$ 402,363
	Text, Broadband ESP, SAS)	XG020005042	5110S-IS2628VM - Computer Assoc BP382		$ 1,573,223	$ 3,137,106	$ 1,599,604	$ (25,961)	$ 6,283,973
		XC434017227	5110S-IS2628VM - Computer Assoc BP382 Up					$ 1,517,425	$ 1,517,425
License Total				$ 348,873	$ 2,114,259	$ 3,418,417	$ 1,889,261	$ 1,840,699	$ 9,611,509
Platform	Mainframe support and	XC175017372	5110S-IS2646 Mainframe			$ 4,682,687	$ 6,989,588	$ 6,164,708	$ 17,836,983
	storage costs for services	XC175020496	5110S-IS2646 Storage Mainframe					$ 276,209	$ 276,209
	provided by vendor DXC.	XC175021737	5110S-IT2646 Service Mgmt Mainframe					$ 148,646	$ 148,646
		XG020015001	5110S-IS2646 ES CSDC -Mainframe	$ 7,857,491	$ 4,680,405	$ 1,195,523			$ 13,733,419
		XGT01004057	5110S-NHIS2646 ES CSDC -Mainframe GT01	$ (2,014,261)					$ (2,014,261)
Platform Total				$ 5,843,230	$ 4,680,405	$ 5,878,210	$ 6,989,588	$ 6,589,562	$ 29,980,996
	Application support services								
Support	provided by vendor IBM.	XC434009852	5110S-IS2770 SDC1 Bundle#32 CSS Ph2 C434	$ 1,444,938	$ 1,599,495	$ 1,806,770	$ 1,921,451	$ 1,762,446	$ 8,535,101
Support Total				$ 1,444,938	$ 1,599,495	$ 1,806,770	$ 1,921,451	$ 1,762,446	$ 8,535,101
Project	Minor work projects to make	XC175017300	5110S-INVP4477-Customer Minor Works			$ 124,946	$ 213,771		$ 338,717
	updates to the CIS								
	application	XC434012726	5110S-INVP1293 FY14 CSS Minor Works	$ 71,473					$ 71,473
Project Total				$ 71,473		$ 124,946	$ 213,771		$ 410,190
	Security services for the CIS								
	application provided by								
Security	vendor DXC.	XG020021733	5110S-IT2646 Security					$ 850,424	$ 850,424
Security Total								$ 850,424	$ 850,424
Grand Total				$ 7,708,515	$ 8,394,159	$ 11,228,342	$ 11,014,071	$ 11,043,131	$ 49,388,219

This attachment is an MS Excel file and has been provided separately.

DPS-665 Attachment 2 - Exhibit__(SCSP-1)(DPS-665 Attachment 2)

Date of Request: October 2, 2020 Request No. DPS-815
Due Date: October 13, 2020 NMPC Req. No. NM-1053

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Kayla Whitaker

TO: National Grid, Shared Services Panel

SUBJECT: Service Quality Assurance Program – Customer Service (SQAP-CS) Basis Points

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. Provide the value of the negative revenue adjustments in basis point equivalents, separately for electric and gas, for each of the following Service Quality Assurance Program – Customer Service (SQAP-CS) metrics:

   a. PSC Complaints;
   b. Residential Satisfaction Index;
   c. Commercial Satisfaction Index; and,
   d. Percent of Calls Answered within 30 Seconds.

2. NMPC's response to IR UIU-035 stated that a 75 percent electric and 25 percent gas allocation will be utilized in these proceedings. Provide a detailed explanation on how the Company determined these allocations for the SQAP-CS in these proceedings.

Response:

1. The total value in basis points of $19.8M (the total negative revenue adjustment for these four metrics) is approximately 35 basis points for electric and 48 basis points for gas. One basis point equals approximately $423,396 for electric and $103,195 for gas. The breakdown for each metric is as follows:

Metric	Total $ NRA	Electric BP	Gas BP
PSC Complaint Rate	$7.830 million	14 bp	19 bp
Residential Satisfaction Index	$3.990 million	7 bp	10 bp
Commercial Satisfaction Index	$3.990 million	7 bp	10 bp
Percent of Calls Answered 30 Seconds	$3.990 million	7 bp	10 bp

2. The 75 percent electric and 25 percent gas allocation for the Customer Service Quality negative revenue adjustments is an historic allocation that has been contained in the Company's rate plans at least as far back as Cases 12-E-0201 and 12-G-0202 ("2012 NMPC Rate Cases"). *See* Appendix 7, Attachment 1, Section 2.1 of the Joint Proposal in the 2012 NMPC Rate Cases. The same allocation was utilized in the Joint Proposal in Cases 17-E-0238 and 20-G-0239. *See* Appendix 15, Section 2.1. The Company is not proposing to change this historic allocation.

Name of Respondent: James Molloy

Date of Reply: October 9, 2020

Date of Request: October 13, 2020 Request No. DPS-901
Due Date: October 23, 2020 NMPC Req. No. NM-1190

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, John Sheevers

TO: National Grid, Shared Services Panel

SUBJECT: Online Rate Calculator for residential end-users of submetered electric service

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. Provide the estimated cost associated with implementing an online rate calculator for end-users with submetered residential electric service. If possible, provide an estimate of how much it would take to implement.

2. Provide the estimated cost associated with maintaining an online rate calculator for end-users with submetered residential electric service. If possible, provide details on what that maintenance process would entail.

3. Identify the number of NMPC's customers who are currently authorized to, or in fact do submeter electric service to residential customers in the Company's service territory.

Response:

1. The high-level conceptual estimate for implementing an online rate calculator for end-users with submetered residential electric service is $500,000. If this project moves forward, the estimate is subject to change once the requirements phase of the project is completed.

2. It is difficult to determine the level of maintenance required for an online calculator without working through the requirements phase of the project. There will be incremental IT and business support required to update prices, rate structures, and execute controls around accuracy. At this time, absent the project proceeding to the requirements phase, the Company is unable to provide an estimate of these costs. The level of maintenance required will ultimately depend on the design of the calculator.

3. Currently, nine customers are authorized to submeter electric service to residential customers in the Company's service territory.

Name of Respondent: Date of Reply:
Michele Wilder October 23, 2020

Date of Request: October 25, 2020 Request No. DPS-901 SUPPLEMENTAL
Due Date: October 27, 2020 NMPC Req. No. NM-1190 SUPPLEMENTAL

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, John Sheevers

TO: National Grid, Shared Services Panel

SUBJECT: Online Rate Calculator for residential end-users of submetered electric service

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. Provide the estimated cost associated with implementing an online rate calculator for end-users with submetered residential electric service. If possible, provide an estimate of how much it would take to implement.

2. Provide the estimated cost associated with maintaining an online rate calculator for end-users with submetered residential electric service. If possible, provide details on what that maintenance process would entail.

3. Identify the number of NMPC's customers who are currently authorized to, or in fact do submeter electric service to residential customers in the Company's service territory.

Response:

3. The Company is supplementing its response to Question 3 to correct the number of customers authorized to submeter residential electric service in its service territory. Currently, 26 customers are authorized to submeter residential electric service in the Company's service territory, with seven applications currently pending Commission approval. Attachment 1 provides a summary of approved and pending submetering petitions.

Name of Respondent:
Michele Wilder
Kellie I. Smith

Date of Reply:
October 27, 2020

Niagara Mohawk Power Corporation
d/b/a National Grid
Case 20-E-0380 20-G-0381
Attachment 1 to DPS-901 Supplemental

Petitioner Name	Case No.	Pending	Approved
CityStation East, LLC	12-E-0446		X
172 River Street Assoc., LLC	14-E-0018		X
Harmony Prima Lofts, LLC	14-E-0053		X
Cottage Street Apartments, LLC	15-E-0200		X
122 2nd Street Assoc., LLC	15-E-0393		X
HV Housing, LLC	16-E-0184		X
Affinity Potsdam Properties, LLC	16-E-0225		X
501 Broadway Troy, LLC	16-E-0482		X
2845 Niagara Street	17-E-0176	X	
West Street Apartments, LLC	17-E-0199		X
1285 Delaware Avenue, et al	17-E-0664	X	
Bruns Associates, LLC	17-E-0684		X
Harmony Mills South LLC	18-E-0136		X
Harmony Mills Fallsview LLC	18-E-0146		X
Harmony Mills Riverview LLC	18-E-0274		X
Harmony Mills West LLC	18-E-0275		X
Tax Credit Asset Management, LLC	18-E-0400		X
Kindle Associates, LP	18-E-0673		X
Sunrise Solars, LLC	19-E-0052		X
16 Sheridan Avenue, LLC	19-E-0070		X
ACC OP (Park Point SU) LLC	19-E-0206		X
Clarkson University	19-E-0208	X	
791 Washington Street, LLC	19-E-0510		X
MSBP 237 Master Tenant, LLC	19-E-0590		X
Fourth Street Troy, LLC	19-E-0743		X
76 North Pearl LLC	20-E-0041		X
45 Columbia Street Assoc. LLC	20-E-0071		X
Campus West, LLC	20-E-0088		X
39 Columbia Street Assoc. LLC	20-E-0247		X
St. Paul's Center	20-E-0308	X	
161-163 First LLC	20-E-0318	X	
136 Broadway, LP	20-E-0393	X	
701 River Street Associates, LLC	20-E-0394	X	

Date of Request: October 20, 2020 Request No. DPS-980
Due Date: October 30, 2020 NMPC Req. No. NM-1337

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Chelsea Kruger

TO: National Grid, Shared Services Panel

SUBJECT: Cold Weather Provisions

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. Each year during the cold-weather period, the Company voluntarily provides customer protections in addition to the protections in the Home Energy Fair Practices Act. Provide a description of these customer protections.

2. For each of the protections in Question 1, above, provide the Company's processes and procedures.

Response:

1. In addition to the protections in the Home Energy Fair Practices Act, the Company will not terminate residential service on days when the temperature is expected to fall below 32 degrees (see Page 1 of Attachment 1).

2. Please refer to Attachment 1 for the Cold Weather Procedure.

Name of Respondent: Date of Reply:
Paul S. Leo October 28, 2020

Cold Weather Period- LIG/UNY

Last modified by [redacted]

Summary:

The Public Service Commission has identified November 1st through April 15th as **"The Cold Weather Period"**. During this time frame all residential accounts and non-residential accounts serving residential living quarters in threat of disconnect, are subject to winter disconnect procedures.

"*No utility shall terminate service to any residential customer for nonpayment of bills during a two-week period encompassing Christmas and New Year's Day*." HEFPA 11.4 (d) (2)

Jump to section:

General Information
Collection Investigation (72 Hour Notice)
Cut-Out (24 Hour) Follow Up Requirements
Dormant Account Review

General Information:

- From November 1st to April 15th, specific guidelines are to be followed to determine if loss of the heat related service would cause a Serious Impairment to human health to the customer.
  - Heat related service would include:
    - Direct gas and electric heating.
    - Residence where electric system is required to operate heating systems.

- In agreement with the PSC, the field will **NOT** terminate residential service on days when the temperature is expected to fall below 32 degrees.

- This does **NOT** affect the 72 Hour Notification process, which will continue through the winter.
- In the event the temperature changes from the forecast, the field will be responsible for determining the ruling and informing Credit & Collections that they have cancelled collections for that day.

Collection Investigation (72 Hour Notice):

- Must be given prior to termination of service.

- 72 Hour Notice can be completed by:
  - A Collector via a Collection Investigation Service Order.
  - An outbound call generated by Collection Activity of "3 Day Call Request".
  - An inbound call when the account has an expired disconnect notice.

- Refer to 72-Hour Notice Decision Table (https://cite.nationalgridus.com/docs/72-hour-notice-decision-table-referral-guide-for-mainstream-lig-uny)

Note: Phone contact must be made with the account holder or other adult resident.

Cut-Out (24 Hour) Follow Up:

- Follow up is required if:
  - No contact has been made at the time the Collection Investigation (72 hour notice) or Cut-Out Non-Pay was issued.
  - No contact has been made at termination and no contact after termination of service, National Grid has to do a follow up visit at the home of the customer whose service has been terminated to see if the loss of heat related service has caused a Serious Impairment to the customer of record or any resident of the customers premise.

Dormant Account Review:

- Occurs between September 1st and October 31st

- A survey is conducted of customers who have been Cut-Out in the past twelve (12) months and have not had service restored.
- National Grid will attempt to establish face to face contact with the customer to determine if the loss of heat related service during the winter period will cause a Serious Impairment to human health.

Date of Request: October 21, 2020 Request No. DPS-1014
Due Date: November 2, 2020 NMPC Req. No. NM-1391

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Chelsea Kruger

TO: National Grid, Shared Services Panel

SUBJECT: Shared Metering

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. For each of the last five calendar years, provide the following, separately, by month:

   a. the number of the Company's active Shared Metering cases; and

   b. the number of Shared Metering cases that the Company has closed out.

2. For each month of 2020 to date, provide the following:

   a. the number of the Company's active Shared Metering cases; and

   b. the number of Shared Metering cases that the Company has closed out.

3. Regarding the active Shared Metering cases identified in response to Question 2a above, provide a detailed explanation for why the Company paused any Shared Metering case investigations due to the COVID-19 pandemic. Provide when the Company expects to resume Shared Metering investigations and the Company's plans and processes for resuming these activities.

4. Provide a detailed explanation why the Company delayed closing any of the Shared Metering cases included in the response to Question 2b above, if applicable.

Response:

1a. Active Cases per month, per year

Month	2015	2016	2017	2018	2019
January	101	67	117	92	104
February	94	76	100	77	108
March	135	95	138	115	95
April	112	90	88	99	95
May	104	92	123	121	95
June	162	118	91	110	75
July	119	86	74	97	92
August	106	91	103	89	104
September	98	110	138	105	88
October	84	98	83	97	105
November	51	82	69	63	49
December	56	85	64	54	72

1b. Closed Cases per month, per year

Month	2015	2016	2017	2018	2019
January	4	47	97	57	80
February	51	72	76	71	81
March	83	68	117	110	103
April	131	70	81	115	120
May	112	77	186	132	94
June	146	92	131	100	76
July	142	82	65	117	75
August	108	94	68	105	111
September	102	126	125	91	103
October	97	152	127	97	113
November	73	102	100	110	53
December	67	70	56	61	69

2a. Active Cases in 2020 per month

Month	Total
January	107
February	84
March	31

2b. Closed Cases in 2020 per month

Month	Total
January	86
February	66
March	58

3. During the initial response to the COVID-19 pandemic, all non-emergency field activities were suspended on March 18, 2020, to ensure the safety of our customers and employees. On March 31, 2020, National Grid received additional guidance from the Commission's General Counsel that resulted in National Grid suspending investigations until such time that the state of emergency had been lifted. National Grid was notified on October 16, 2020, that investigations could resume effective October 26, 2020, and the Company expects to begin outreach effective October 28, 2020. National Grid has taken the following actions to resolve the backlog generated and resume investigations safely:

- Adjustment to letters and mailings that clearly state expectations and safety precautions for both customers and National Grid personnel.
- Creation of safety inserts to be included in mailings that can be posted in common areas to ensure all tenants are aware of expectations and safety precautions.
- Analyzed backlog to review cases by region that require investigation or recheck orders to determine high volume areas.
- Developed additional call scripting to be used when scheduling investigations that include safety protocols and expectations of the landlord.
- Field staff has completed refresher training on how to handle shared metering investigations and rechecks.
- Additional field and office staffing are prepared to support the resolution of the backlog.
- Refresher training for office back up support was provided.
- Accounts will be noted and tracked where the customer or landlord refuses access.
- Customers or landlords that do not feel comfortable scheduling investigations at this time will be documented, and National Grid will attempt scheduling again after three to four weeks.
- Landlords that request an extended timeframe to schedule the investigation will be accommodated and the account will be noted.

- Additional reporting and quality monitoring will be instituted to ensure timeliness and accuracy.

- Weekly meetings between AMO and Field are scheduled to ensure National Grid can quickly address any questions, concerns, or issues.

4.

Case Number	Reason for delay over 30 days
16797	Case originally suspended – tenant/owner scheduled investigation after suspension.
19573	Case originally suspended – tenant/owner scheduled investigation after suspension.
19580	Delay in reviewing Shared Meter Field Report and render determination.
19581	Delay in reviewing Shared Meter Field Report and render determination.
19623	No cooperation from owner or tenant (case suspended)
19627	Steps to contact/schedule investigation delayed overall timeliness
19628	Steps to contact/schedule investigation delayed overall timeliness
19661	Delay in reviewing Shared Meter Field Report and render determination.
19662	Steps to contact/schedule investigation delayed overall timeliness
19666	Steps to contact/schedule investigation delayed overall timeliness
19665	Steps to contact/schedule investigation delayed overall timeliness
19669	Steps to contact/schedule investigation delayed overall timeliness
19668	Investigation scheduled close to/after 30 day period
19677	Delay in receiving Shared Meter Report from CMS
19678	Steps to contact/schedule investigation delayed overall timeliness
19680	No cooperation from owner or tenant (case suspended)
19683	Delay in reviewing Shared Meter Field Report and render determination.
19684	Steps to contact/schedule investigation delayed overall timeliness
19685	Steps to contact/schedule investigation delayed overall timeliness
19682	No cooperation from owner or tenant (case suspended)
19686	No cooperation from owner or tenant (case suspended)
19689	Investigation scheduled close to/after 30 day period
19690	No cooperation from owner or tenant (case suspended)
19693	No cooperation from owner or tenant (case suspended)
19692	Investigation scheduled close to/after 30 day period
19694	No cooperation from owner or tenant (case suspended)
19699	Steps to contact/schedule investigation delayed overall timeliness
19695	Investigation scheduled close to/after 30 day period
19698	Steps to contact/schedule investigation delayed overall timeliness
19703	Investigation scheduled close to/after 30 day period
19704	Steps to contact/schedule investigation delayed overall timeliness
19700	No cooperation from owner or tenant (case suspended)
19702	Investigation scheduled close to/after 30 day period
19701	Investigation scheduled close to/after 30 day period
19705	Steps to contact/schedule investigation delayed overall timeliness
19708	Delay in reviewing Shared Meter Field Report and render determination.
19710	Investigation scheduled close to/after 30 day period

Case Number	Reason for delay over 30 days
19716	Steps to contact/schedule investigation delayed overall timeliness
19719	Steps to contact/schedule investigation delayed overall timeliness
19720	Steps to contact/schedule investigation delayed overall timeliness
19718	Steps to contact/schedule investigation delayed overall timeliness
19726	Investigation scheduled close to/after 30 day period
19724	Steps to contact/schedule investigation delayed overall timeliness
19730	Steps to contact/schedule investigation delayed overall timeliness
19731	Investigation scheduled close to/after 30 day period
19732	Delay in reviewing Shared Meter Field Report and render determination.
19736	Steps to contact/schedule investigation delayed overall timeliness
19734	Delay in reviewing Shared Meter Field Report and render determination.
19735	Steps to contact/schedule investigation delayed overall timeliness
19737	No cooperation from owner or tenant (case suspended)
19758	No cooperation from owner or tenant (case suspended)
19746	No cooperation from owner or tenant (case suspended)
19748	Investigation scheduled close to/after 30 day period
19749	Investigation scheduled close to/after 30 day period
19755	Investigation scheduled close to/after 30 day period
19753	Delay in receiving Shared Meter Report from CMS
19750	No cooperation from owner or tenant (case suspended)
19760	Steps to contact/schedule investigation delayed overall timeliness
19761	Steps to contact/schedule investigation delayed overall timeliness
19747	No cooperation from owner or tenant (case suspended)
19743	No cooperation from owner or tenant (case suspended)
19768	Investigation scheduled close to/after 30 day period
19769	No cooperation from owner or tenant (case suspended)
19770	Investigation scheduled close to/after 30 day period
19771	Owner cooperation issues (Non-Compliance)
19777	No cooperation from owner or tenant (case suspended)
19774	Investigation scheduled close to/after 30 day period
19782	Investigation scheduled close to/after 30 day period
19781	Investigation scheduled close to/after 30 day period
19780	Investigation scheduled close to/after 30 day period
19784	Steps to contact/schedule investigation delayed overall timeliness
19792	Delay in reviewing Shared Meter Field Report and render determination.
19790	No cooperation from owner or tenant (case suspended)
19791	Investigation scheduled close to/after 30 day period
19795	No cooperation from owner or tenant (case suspended)
19796	Steps to contact/schedule investigation delayed overall timeliness
19793	Investigation scheduled close to/after 30 day period
19806	Owner cooperation issues (Non-Compliance)
19811	No cooperation from owner or tenant (case suspended)
19814	Steps to contact/schedule investigation delayed overall timeliness
19815	Steps to contact/schedule investigation delayed overall timeliness
19809	Steps to contact/schedule investigation delayed overall timeliness
19808	Delay in reviewing Shared Meter Field Report and render determination.
19807	Delay in reviewing Shared Meter Field Report and render determination.
19810	Steps to contact/schedule investigation delayed overall timeliness

Case Number	Reason for delay over 30 days
19816	Steps to contact/schedule investigation delayed overall timeliness
19817	Steps to contact/schedule investigation delayed overall timeliness
19818	Investigation scheduled close to/after 30 day period
19819	Investigation scheduled close to/after 30 day period
19826	Steps to contact/schedule investigation delayed overall timeliness
19827	Steps to contact/schedule investigation delayed overall timeliness
19830	Steps to contact/schedule investigation delayed overall timeliness
19831	Steps to contact/schedule investigation delayed overall timeliness
19832	Steps to contact/schedule investigation delayed overall timeliness
19837	Steps to contact/schedule investigation delayed overall timeliness
19836	Steps to contact/schedule investigation delayed overall timeliness
19838	Steps to contact/schedule investigation delayed overall timeliness
19884	Investigation scheduled close to/after 30 day period
19876	Steps to contact/schedule investigation delayed overall timeliness

Name of Respondent:
Megan Piccarreto

Date of Reply:
October 30, 2020

Date of Request: October 21, 2020 Request No. DPS-1016
Due Date: November 2, 2020 NMPC Req. No. NM-1393

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Chelsea Kruger

TO: National Grid, Shared Services Panel

SUBJECT: Shared Metering

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. According to the Company's response to IR DPS-486, the Company's Shared Metering unit is minimally staffed with only three representatives. Provide the Company's plan for scheduling, responding to, and preparing required customer letters in compliance with Public Service Law Section 52.

2. With the shared staffing resources and numerous investigations pending for both NMPC and KEDLI, will there be a Senior Representative and/or a supervisor assigned to the Shared Metering unit for oversight of all actions taken in these case investigations? If not, explain why not.

Response:

1. Over the years, the Company has been able to streamline the process, enabling staffing efficiencies while still meeting its obligations under the Public Service Law. It should be noted that the employees previously assigned to Shared Metering work are still within the department working on different tasks, but can be leveraged to assist with this work, as needed.

   The Day 1 process begins by first completing an initial review of the complaint and opening a formal case. Thereafter, the Company attempts to notify the landlord and/or property owner of the case and the requirements under the shared metering law. If the Landlord cannot be reached, the Company will attempt to schedule an investigation, with a follow up attempt by day 10.

Once an appointment is scheduled, additional outreach is made to the tenant advising them of the investigation. In addition to this outreach, a certified letter is mailed to the landlord/owner along with an informational letter to the tenant notifying them of the shared metering law.

Once the investigation is completed, paperwork is sent from the field technician to the AMO organization to render a determination, correct billing as needed, and send final notifications by Day 30.

The timing of the requirements under the Public Service Law may be impacted by:

- The landlord's response to the Company's outreach and willingness to schedule an investigation;

- The landlord's availability to be present for the investigation;

- The landlord's compliance with providing the Company with full access to the premise; and

- The investigation being cancelled by the scheduling party, requiring the AMO department to make a second attempt

See the Company's response to DPS-1014 to for the Company's plan for resuming shared metering work and addressing the backlog from the pandemic and resulting pause in the work.

2. Yes, the Company will have two senior representatives to support Shared Metering and a supervisor to oversee all actions taken in the case investigations.

Name of Respondent: Date of Reply:
Megan Piccarreto November 2, 2020

Date of Request: October 26, 2020 Request No. DPS-1041
Due Date: November 5, 2020 NMPC Req. No. NM-1452

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Kayla Whitaker

TO: National Grid, Rate Design - Gas - Misc. Revenues

SUBJECT: Follow-up to DPS-326

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

Provide a detailed description on whether customers' account credits resulting from the Company missing a scheduled appointment are borne by NMPC's shareholders or included in base rates. If these credits are included in base rates, provide a reference to where the credits are located within the Company's revenue requirement, citing to the testimony/exhibit number, page number, etc.

Response:

There were no customer account credits resulting from the Company missing a scheduled appointment included in the Company's gas revenue forecast or revenue requirement.

However, in preparing the response, the Company found that a portion of missed appointment credits issued to customers were inadvertently embedded in a quarterly reclassification adjustment in the Historic Test Year ("HTY") and included in the Supervision & Administration ("S&A") line shown on Exhibit___(E-RDP-1). The S&A revenue forecast included on line 69 of Exhibit __ (E-RDP-2CU), Schedule 4, Page 1 for the Rate Year and Data Years was calculated by multiplying the HTY revenues by the applicable general inflation rate. By doing so, the Company inadvertently included $3,157, $3,230, and $3,309, as a reduction to revenues, in the S&A revenue forecast in the Corrections and Updates filing for the Rate Year, Data Year 1, and Data Year 2, respectively, included on the "Other Misc Electric Revenue" line of Exhibit___(E-RDP-2CU), Schedule 1.

Name of Respondent: Date of Reply:
Kellie I. Smith November 5, 2020

Date of Request: November 5, 2020 Request No. DPS-1066
Due Date: November 16, 2020 NMPC Req. No. NM-1604

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Chelsea Kruger

TO: National Grid, Shared Services Panel

SUBJECT: Customer Information System

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. Page 51 of the Shared Services Panel direct testimony states that NMPC's portion of the CIS replacement project will be $163.734 million allocated to electric and $61.085 million allocated to gas. However, the Company's Exhibit___(SSP-4) states NMPC's costs for the project are $144.603 million for electric and $53.947 million for gas.

   a. Provide the correct NMPC allocation amounts, broken down by capital expenditures, operating expenses and Allowance for Funds Used During Construction.
   b. Provide a detailed explanation for the different amounts provided in the Company's direct testimony and Exhibit___(SSP-4).

2. Provide NMPC's allocated share of the run-the-business expenses for the CIS project after the estimated implementation in 2028.

Response:

1. a. The Shared Services Panel's direct testimony correctly states Niagara Mohawk allocation amounts of $163.734 million and $61.085 million. The originally filed Exhibit __ (SSP-4) is incorrect. Please see Attachment 1 for a corrected version of the Company's Exhibit _ (SSP-4).

   b. Attachment 1 is the corrected version of Exhibit _ (SSP-4), which has been updated to indicate the latest capex/opex split determination, anticipated sales tax implications, and alignment to the new timeline shown in this filing. Shifting cost into capex affects AFUDC, and the sales tax and timeline adjustments also

contribute to cost increases as compared to the originally filed Exhibit __ (SSP-4). Anticipated sales tax impacts account for $0.422 million for electric and $0.157 million for gas, while change in AFUDC accounts for $7.597 million for electric and $2.834 million for gas. The remainder of the difference is due to timeline adjustment. Please note that the Company's revenue requirement reflects the amounts in the corrected version of Exhibit __ (SSP-4).

2. In the attached corrected version of Exhibit _ (SSP-4), Section 9 showing the anticipated effect on system operations expense (RTB). During year 9, the legacy CSS system is retired, giving Niagara Mohawk electric and gas companies a partial-year benefit. Year 10 shows the first full-year benefit for Niagara Mohawk.

Name of Respondent: Date of Reply:
Jeffrey P. Martin November 16, 2020

BUSINESS CASE

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SECTION 1: INVESTMENT DESCRIPTION

Problem Statement and Current Situation

National Grid's legacy Customer Information Systems (CIS') were implemented decades ago and are quickly approaching obsolescence. The case for change is driven by the company's need to address systemic infrastructure challenges it currently faces and the need to meet complex requirements of new customer programs, emerging digital technologies, and progressive rate design. An evolving energy marketplace and customer expectations regarding their service experience demand a significantly enhanced technology platform – *i.e.*, one that is designed to meet the information needs of customers in the current and future environment and one that will support policy goals related to improved customer choice, deployment of advanced technologies and increased reliance on distributed energy resources. Replacement of key business and billing processes with the proposed CIS solution will produce many benefits enabling National Grid to more effectively implement new customer programs and rate options and providing customers with a significantly improved customer-centric service experience. Modernization of National Grid's CIS systems will transform the way the company does business and elevate the service and support customers receive in the evolving energy market for decades to come. Initiating the transition to a modern CIS platform must begin now given the current state of the legacy CIS systems and the timeline required for replacement.

Specific systemic infrastructure challenges identified as part of the customer strategy assessment leading to this business case evaluation include:

Delivery Risk:
National Grid's legacy customer systems are less stable and less reliable due, in part, to technology obsolescence, a rapid deployment of increasingly complex rates and other regulatory requirements, and an exponential increase in the amount of data processing required by the system since the legacy systems were deployed. Also contributing to the instability is the number and complexity of integrations between the legacy CIS systems and subsystems that have been added over two decades as the energy market, regulatory requirements and customer-utility relationship have transformed. Current customer systems are increasingly difficult to adapt to the needs of the new digitally equipped customer and to regulatory and company demands that they were never prepared to serve (e.g. new products and services, virtual net metering, etc.).

Operational Risk:
Technologies used in current systems are largely unsupported and required skillsets are difficult to find in the current market (e.g. imminent retirement of key resources). In addition, there is a wide range of system-driven operational and technology pain points. For example, the business is unable to keep up with new Distributed Generation requirements due to system and resource limitations. A lack of business-configurable capabilities drives significant dependence on IT for even simple business rule and configuration value changes creating unnecessary lags in deploying such changes (e.g. rate changes). In the area of Retail Choice, there are numerous manual-intensive workarounds in place that could be resolved through systems, data, and process improvement. With 6.7M bills per month rendered by CRIS and CSS, and 12.8M customer calls per year, these pain points must be addressed.

Business Risk:
A digital consumer technology revolution is underway and its profound force presents both challenges and opportunities for the utility industry. The rapid pace of change is accelerating market convergence, reducing barriers for new market entrants, driving down the cost of product innovation, and increasing the speed at which consumers adopt new technologies. Smart and distributed technologies (such as home energy management, solar, electric vehicle, and storage), mobile applications, and data-driven products and services are coming to market and evolving quickly. Such drivers and National Grid's emerging offerings (e.g. Distributed Generation, Retail Choice, NG Ventures, EV) require business agility to bring them to market and quickly operationalize in a manner that currently is not achievable due to limitations of the current infrastructure.

To facilitate this alignment, National Grid is progressing its offer of digitally-enabled customer service capabilities required to maintain exemplary relationships with its customers and developing new products and services that will provide a differentiated value proposition. However, the customer facing capabilities to be enabled through programs such as GBE and CxT require the core CIS systems to keep pace with a customer-central, digital-first customer service delivery model.
This new delivery model requires stability of the systems of record (i.e. CIS) and continuous innovation and differentiation for the systems of engagement (i.e. Salesforce CRM). Emerging offerings will also require the company to develop new skills and technology, create and strengthen strategic partnerships, and refine its program and project governance structure.

Program Outcome – What Does Success Look Like?

While National Grid is proud of its past success in providing accurate bills and excellent customer service, doing so has come at a cost given the age and limited capabilities of its current CIS systems. The enhanced services provided to customers have been achieved through highly customized functions in the legacy CIS systems and the addition of sub-systems in the legacy landscape. These modifications greatly increase the complexity of the customer service and revenue cycle application portfolio, adding functional redundancy and creating data proliferation in various databases and systems where customer information resides. The lack of a consolidated system that provides a 360-degree view of the customer creates obstacles to providing a consistent and positive customer experience. In addition, "layering" on of customized programming necessary to implement regulatory requirements over the years results in a highly complicated system in which each new, approved regulatory change requires inordinate time and resources to implement and is difficult to scale or adapt for each operating company.

The goal of this program is to replace the current legacy CIS systems (CSS, CRIS) with a modern, flexible application capable of performing critical meter-to-cash processes with greater efficiency, scalability, and extensibility for future products and services. This program will also seek to complete the realization of customer service capabilities as set forward in National Grid's Customer Strategy requiring augmentation of the Salesforce CRM platform and integration services currently being deployed by the Gas Business Enablement (GBE) program. This program will also refactor the integration services needed to enable the digital customer experiences that form part of this Customer Strategy.

When the CIS Program has been implemented, success will look like this:

- The Customer Experience when interacting with National Grid is effortless thanks to increased choices and flexibility
- A new Customer Information System provides leading, flexible, and scalable capabilities setting up National Grid for the future
- National Grid can deliver lower cost revenue cycle services (meter reading, billing, credit & collections, payments) while enabled to grow and flex with customer, business and regulator emerging needs (e.g. new products & services), Distributed Generation, Energy Efficiency, and Demand Response programs
- The new CIS allows employees to deliver revenue cycle services with fewer exceptions and manual workarounds to customers, getting it right the first time

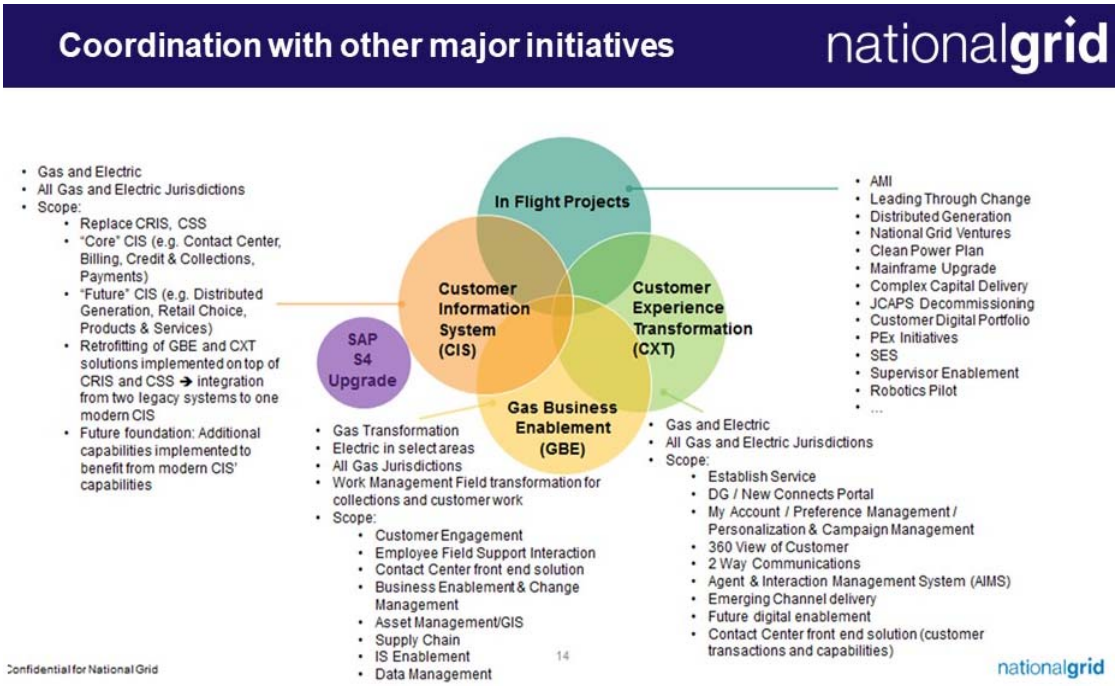
Risks and Opportunities

There is a clear opportunity for a modern CIS to establish the foundation required to grow National Grid's business while reducing cost to serve and mitigate the delivery, operational, and business risks the company faces today. However, as with any large and complex program, there are risks to consider with taking on the implementation. Primary risks to consider when embarking on a CIS implementation include:

1) Other in-flight programs such as Gas Business Enablement (GBE), Customer Experience Transformation (CxT) and Advanced Meter Infrastructure (AMI) introduce interdependencies with the new CIS platform to enable full benefit realization.

2) The CIS replacement alone will not generate cost savings to cover implementation costs, so regulatory recovery is critical to the financial success of this program.

3) Risk of limited resource availability among National Grid staff due to demand across several large programs running in parallel.



Section 8 includes a detailed list of risks and mitigation plans

Solution Strategy

The proposed program to replace National Grid's Customer Information System infrastructure will include the following activities:

- Implement core CIS functions on future state platform for all customer types and jurisdictions
- Integrate the core CIS platform with the retained systems and vendors
- Integrate the core CIS with the CxT, GBE, AMI, and other project solutions where needed
- Enhance / extend the CRM for functionality that is enabled by the new core CIS where needed

Details of all core CIS and CRM functions that will be built as part of CIS replacement program can be found in the Fit / Gap Assessment.

Resource Allocation

Below is the proposed mix of staff required to plan and implement the CIS project. It assumes approximately 377,000 days of effort, and a resource split of approximately: 56% System Integrator, 44% National Grid Employee and Contractor.

This was used in developing a resource cost estimate. This estimate shows the potential high demand on National Grid staff that are used across parallel programs. National Grid will need to source and procure vendors, system integrators and other contractors as needed.

Workstream	Internal (NG Employee)	Internal (NG Contractor)	External / SI
Application	5%	29%	66%
Change Management	35%	5%	60%
Data Conversion & Management	23%	20%	57%
Integrations & Tech	25%	10%	65%
Project Management	55%	10%	35%
Quality Assurance	0%	100%	0%
Stabilization	25%	75%	0%

Note: Resourcing breakdown is preliminary and subject to change

Proposed Scope of Program Delivery

The customer information system replacement and CRM enhancements will affect the following customers, jurisdictions, and process areas:

Commodity Type: Gas and Electric

Jurisdictions: New York, Rhode Island, Massachusetts

Operating Companies:

- KeySpan Energy Delivery – Long Island
- KeySpan Energy Delivery – NY City
- Boston and Essex Gas
- Colonial Lowell and Cape Gas
- Narragansett Gas
- Narragansett Electric
- Massachusetts Electric
- Nantucket Electric
- Niagara Mohawk Gas

- Niagara Mohawk Electric

Customer Segments: Residential, Small Business, Large Commercial and Industrial, Government, Municipal

Process Areas:

- Billing
- Characteristics
- Collections
- Customer Accounting
- Customer Choice
- Customer Service
- Field Service
- Interfaces
- Inventory
- Meter Reading
- New Service
- Payments
- Products
- Self Service

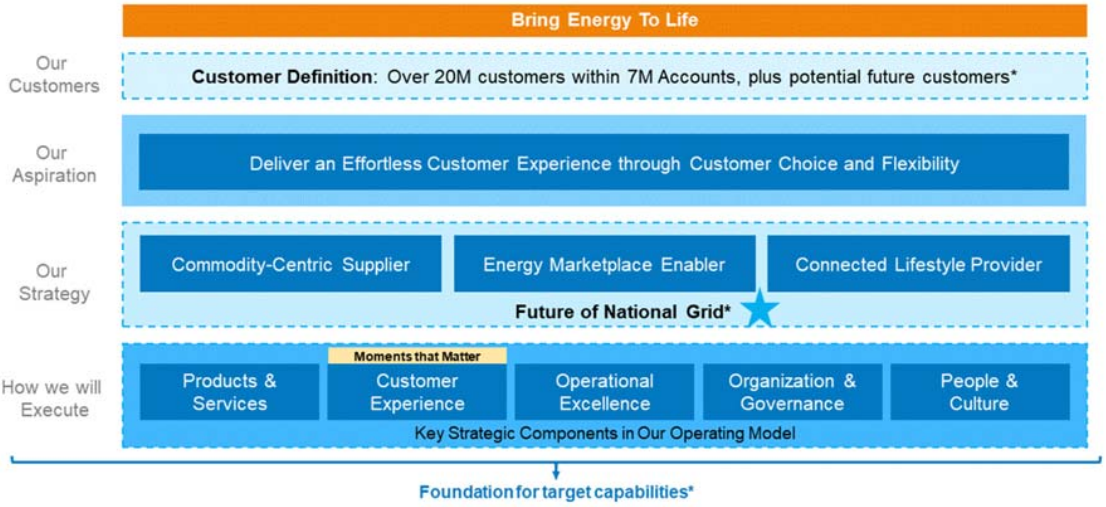
SECTION 2: STRATEGIC FIT

National Grid's "Bring Energy to Life" purpose statement anchors us all in <u>delivering safe and reliable service to our customers</u>.

The company's CIS is at the heart of this purpose statement. The CIS delivers many of the company's goals and promises to customers and regulators as set forth in its tariffs. It also delivers processes and services that comply with federal, state, and local laws. Consistent, timely, and accurate customer transactions are what the company and its customers expect from the CIS. The "step change" the company desires through this business case is a significantly more reliable and consistent CIS foundation that delivers upon business opportunities of today and the future.

National Grid aspires to facilitate an energy marketplace and connect its customers, offering products and services they need today and in the future.

The intersection of these aspirations leads National Grid to continue developing efficiency as a Commodity-Centric Supplier while moving in a strategic direction that incorporates elements of both the Energy Marketplace Enabler and Connected Lifestyle Provider archetypes. This CIS project is critical in enabling National Grid's pursuit of these strategic objectives.



These utility service provider archetypes are defined as follows:

	Commodity-Centric Supplier	Energy Marketplace Enabler	Connected Lifestyle Provider
Product and service	• Primarily electricity, gas, water customer services	• Dual fuel and fixed-price offerings • DER, DSM and personalized products	• Home energy-related products • Microgeneration, connected lifestyle solutions, energy sharing platforms
Value proposition	• Commodity electricity and gas services with efficient digital customer service	• A marketplace to optimize energy consumption and shift customer to value orientation	• Solutions to optimize energy production and consumption based on technologies and insight
Targeted customer profile	• Limited engagement • Expecting convenient, effortless and instant service	• Sporadic to regular switchers in the competitive markets • Traditional energy optimizers in regulated markets	• Prosumer mindset • Tech savvy
Revenue model	• Revenue primarily created by energy sales • Price to retain customers, maximize gross margin and sustain "regulatory contract"	• Revenue created primarily by energy sales with increasing revenue from cross-selling non-energy products and services • Aim is to turn unprofitable customers profitable	• Sales of energy-related and non-energy-related offerings
Strategic imperatives	• Operational excellence • Minimal margin sacrifice • Digital service differentiation	• Profitably via life-time value driven acquisition and retention with relationship build	• Create value through energy and non-energy innovative products and services

Below are capability attributes of these archetypes as enabled by a modern CIS:

Commodity Centric Supplier – Lean and mean low-cost commodity provider

- Ability to meet and respond to regulatory rate and tariff requirements efficiently and quickly
- Ability to offer customer services through low cost, efficient, and self-service channels

Energy Marketplace Enabler - Facilitating transactions in the energy system

- An online tool where consumers can quickly and easily shop for energy-saving products
- Products are delivered by Distributed Energy Resources (DER's)
- Platform empowers consumers to make informed, energy-wise product purchase decisions
- Consumers receive personalized energy-saving tips based on the consumer's home profile and smart meter data

Connected Lifestyle Provider - Partner of choice for the new energy consumer

- Diversifying product portfolio
- A one-stop supplier of integrated solutions for families
- Enabling the benchmark for home automation systems through smart metering and remote-control facilities and appliances
- Providing energy consulting to business customers
- Shifting role from supplier to partner, to target companies with tailored proposals
- Becoming the point of contact between households and businesses

National Grid has also embarked on several other large programs aligned to these strategic priorities, and some of them are highly interdependent with a customer system.

The Customer Experience Transformation (CxT) and Gas Business Enablement (GBE) programs require an interface to the customer system. They depend on consolidated, real time customer data. For example, CxT needs accurate real-time customer data to facilitate a customer's ability to enroll in gas or electric service, and enable a customer to enroll in billing and payment products.

In addition to advancing customer service and revenue cycle capabilities across all jurisdictions, a modern CIS will help resolve existing maintenance and availability issues with the existing CRIS system. Strategically, a modernized and converged CIS platform that operates as the system of record for cleansed customer account data, sub-ledger data, and premise data aligns with National Grid's intent to pursue AMI and ERP/Finance improvements in the future.

SECTION 3: ASSUMPTIONS AND DEPENDENCIES

Below are the assumptions that drove the cost estimates, deployment schedule, and resource plan used as main inputs into the business case.

Assumptions

1. *Solution Architecture*

- CIS is the system of record for customer account master data, CRM is the system of engagement for customer contact and activity master data; CRM relies on certain one-way data sync, real-time data look up, and limited two-way data replication
- The integrated view of the customer landscape includes items that are dependent on the CxT and GBE proposed solutions, if these roadmaps change or are not fully funded, changes may be required to the Customer System Strategy and Roadmap

2. *Resource*

- 50% of project team to be system integrator. 25% National Grid staff. 25% National Grid contractors
- A blend of onshore and offshore presence will be used to help lessen the cost of the program, based on industry standards for similar implementations

Note: Resourcing breakdown is preliminary and subject to change

3. *Deployment Schedule*

- Work effort and resource plan is based on a 3-release deployment plan to account for the complexities of multiple legacy CIS systems, commodity types, and jurisdictions.

4. *Technology*

- Cost estimates and resource plan were modelled using SAP S/4 HANA as the CIS platform
- CIS to be integrated with the Salesforce CRM being developed by the GBE program
- Work effort to build interfaces assumes the use of an enterprise middleware (e.g. Mulesoft and Oracle Fusion)
- Where possible, transformation logic will be executed in the middleware, allowing data to be exported / imported to 3rd party software to minimize work effort required to change the data model in those systems.
- Salesforce Environment (Setup & Hosting) and licensing costs will be covered by the GBE program; no costs related to Salesforce licenses or support have been included in the CIS program
- A blend of basic and descriptive analytics reports will be required

Dependencies

1. *Technology*

- Procurement of hardware, software and licenses for CIS components
- CRM (Salesforce) already installed and CIS is integrating to it
- New middleware components such as Mulesoft will exist for integration
- IT partnership is a key component of the CIS program and integration is continuous

2. *Process*

- The new CIS with common functions and capabilities will depend on simplified and unified processes (across jurisdictions) wherever possible. Example: "Establish and Pay for Service" process.

3. *People*

- National Grid will need to source, procure and align internal and external staff and contractors, vendors, system integrators, etc. Sometimes balancing skills and time across overlapping programs. There may be high demand on time from executives and business function leads.

4. *Regulatory*

- Recovery of program capital and operational expenditures will be dependent on the Business, Finance, and Regulatory teams collaboratively completing and maintaining the detailed business case, financial model, and regulatory filings for each jurisdiction. Early communication of the business case and financial model will help the company assure the highest possible level of cost recovery.

5. *Other programs this project is dependent on*

- Gas Business Enablement (GBE)
- Customer Experience Transformation (CxT)
- Advanced Meter Infrastructure (AMI)
- Distributed Generation (DG)
- In flight customer / revenue cycle initiatives

6. *Other programs that will depend on this program*

- Gas Business Enablement (GBE)
  - Continues to build out additional business capabilities in the new CRM system enabled by the new CIS.
- Customer Experience Transformation (CxT)

  - Drives accuracy of customer data, allows customers to enroll in gas or electric service or enroll in a billing and payment product, etc.
- Advanced Meter Infrastructure (AMI)
- Distributed Generation (DG)
- In flight customer / revenue cycle initiatives

SECTION 4: BENCHMARKING

Case Study 1: ABC, Inc; Multi Jurisdictions, Multi Service

ABC, Inc. operates 3 operating companies in 4 states providing electric service to nearly 2M customers and gas service to roughly 150K customers. ABC is a regulated utility operating in jurisdictions that support customer choice (i.e. third-party supplier) options. ABC operates as the default supplier and distribution company. ABC recently implemented a new best in suite CIS platform for all of its operating companies in a single deployment. Two of its operating companies were fully AMI enabled and one operating company was not. The company had already deployed its AMI/smart metering infrastructure and Meter Data Management System as part of its AMI solution by the time the CIS program started. The main drivers for the company to implement a new, modern CIS platform were:

- Technology obsolescence risk mitigation
- To enable new capabilities that could leverage the full potential of AMI (this was not possible with their legacy CIS systems)
- To converge all the operating companies from two unique legacy CIS systems onto one common platform with a simplified integration architecture.
- To standardize and harmonize business processes and business operating procedures across operating companies.

The effort to integrate the new CIS with this existing AMI and MDMS landscape was part of the scope of the CIS program. Integrating MDMS with the new CIS was a relatively new architecture at this time in the market; a lesson learned was that more upfront architecture design effort and integrated process design involving both the CIS and MDM product owners would have been beneficial. Another lesson learned was the support team for the Customer Choice solution was too small and experienced challenges post go live with keeping up with market transaction/EDI transaction exception backlogs.

ABC initially planned to deploy the new CIS in phases based on legacy system delineation (i.e. two deployments). During the first year of the project, the company re-evaluated its deployment strategy and decided to reduce the project delivery and IT operational risk of multiple deployments and went to a single deployment instead. It was also determined that the effort and cost to train and prepare end users in two large waves was less palatable. Two deployments were also considered highly disruptive to the business operations and extended the duration of change fatigue. To offset the business operational risk that a single deployment introduced, the company invested in additional business readiness activities and capacity services (i.e. staff augmentation to support stabilization and protect service levels).

The company successfully implemented the new CIS in a single deployment and stabilized its operations as planned. ABC attributes this success to:

- The highly rigorous testing and deployment readiness criteria and measurement to those criteria; those criteria were established over a year before deployment.
- ABC executed four complete cutover trials (dress rehearsals) and nine mock conversions.
- ABC began business readiness activities a year before deployment and had strong engagement from the operations managers in these activities. For example, operations teams participated in baselining, usability, business simulation, and business calibration / parallel testing exercises.
- Strategic partnerships with their selected service providers.

Case Study 2: Large Western U.S. IOU's

Two Western U.S. IOUs (16.4M electric customers, 900K gas customers) filed with their regulator seeking rate recovery and approvals to proceed with their plans for re-platforming their CIS legacy systems. These utilities are regulated and operate in a market with very progressive customer programs (e.g. DSM, DR, EE), products and services offerings, and are fully AMI enabled with a regulatory mandated requirement to provide all customer segments with multiple rate options based on time-of-use interval data by 2019. Customer choice is growing through the Community Choice Aggregation and Direct Access initiatives. These utilities also face significant change in the market driven by ambitious energy policy is driving significant investment in energy efficiency and renewable generation. The Distribution Resource Plan (DRP) requires that the utilities must plan to integrate increasing penetration of Distributed Energy Resources (DERs): 33% by 2020 and 50% by 2030. These utilities operate approximately 150 DSM and 100 non-DSM programs and products representing a $1B operating budget to manage (including ~$400M in subsidies for low income programs). Today over 50% of these programs are administered or out-tasked. These utilities are engaged in efforts to re-platform their legacy customer systems in response to these market and regulatory forces as well as the following business challenges:

A need to lower operating costs and advanced capabilities –
The cost of supporting an aging IT mainframe infrastructure and the proliferation of customer databases and redundant applications require significant support operational staff from both business and IT. They needed to increase the effectiveness of IT while reducing its cost. Further, the legacy CIS systems were not equipped to advance capabilities quickly which hindered their ability to meet the goals of their customer service strategy – to interact with customers in simple and easy to understand ways that deliver basic services, such as payment reminders and outage notifications, through the technology of their choice, thus increasing the need to have the capabilities and capacity to deliver robust and effective digital solutions quickly.

Technology obsolescence risks –
These utilities have customer service systems composed of many applications; the age of these systems spanned 15 to 40 years in operations. Given the age and current support structure of this portfolio, the companies assessed their IT operational risk to proactively: (1) reduce business risk by ensuring the application portfolio has the appropriate technology updates needed to mitigate information security exposures, and (2) reduce business risk resulting in application failures resulting from outdated or unsupported vendor technology.

Since software assets suffer from the same phenomenon of age-related degradation as do many assets such as poles, wires and transformers, the age of software assets is a key driver for technology obsolescence due to differences in programming languages required for processing new forms of data, increased vulnerability to security risks or a failure to operate because software vendors limit their support and only patch updates to their more recent product versions that are more compatible with the newer technologies. In addition, many of the utilities oldest applications were not extensively documented for purposes of sustaining knowledge transfer to newer support resources.

Improving the pace at which regulatory and market demands are met through the implementation of a modern CIS system that is easily configured, requires minimal customization, and allows for adoption of continual product vendor updates that are provided as part of the COTS or SaaS offering.

These companies considered two approaches to their business problem:

Scenario 1: Re-platform to a modern best in suite CIS platform

Scenario 2: De-risk the Legacy Solution.

Both utilities chose to proceed with scenario 1 after extensive analysis supported by multiple third parties and consultancies. Their rationale for taking this approach was premised on:

1) Fit, flexibility, and risk: A modern CIS platform scenario has the most flexibility and fit since it can be more easily adapted by a more current workforce (e.g. powerful configuration tools available, extensions are still modular and reusable, etc.), integrates more efficiently and easily with current and future technologies compared to the mainframe legacy applications, and uses a highly standardized and rigorous data model.

2) Complexity, cost, and timeline: The upfront effort and schedule to remediate the legacy applications using the existing mainframe platform are lower compared to the cost of implementing a new modern CIS. However, it would not yield significant business improvements. When factoring in the costs to remedy and enhance legacy CIS in anticipation of regulatory demands, the total costs were comparable to re-platforming to a new CIS.

3) Strategic fit, TCO, and overall benefits are compared. The strategic fit was determined to be best with the new CIS re-platform option, but requires a significant upfront cost (Capital and O&M). However, the business case was proven to have a positive benefit/cost ratio based on the utilities' revenue requirements.

Both utilities have filed with the Regulator. One filed for recovery of the new CIS as part of their GRC, General Rate Case. The other submitted a special filing and not with the GRC.

Case Study 3: Large Southern Utility, Multi-Jurisdictional, Multi Commodity

This company is one of the largest energy service providers in the U.S. Its utilities provide electric services in four states and gas services in seven states. Similar to National Grid, this multi-jurisdictional and multi-operating company utility is focused on reducing overall cost to

serve customers, improving customer experience, and driving growth. They will do this by utilizing AMI technology and expanding products and services, reducing time and cost to market for new products and services and mitigating the risk of aging technology. This company is seeking to replace its legacy systems with a flexible, modern, and scalable Customer Service Platform that will harmonize customer service processes for all its operating companies and considers this convergence core to achieving their business objectives.

Based on this company's business and technology drivers, they are pursuing a strategy that would:

a. Establish a foundation for the future, and achieve business value incrementally
b. Leverage New IT to deliver CIS transformation faster and with less risk, and
c. Sustain Organizational change throughout the journey.

This company's approach to the business problem is to focus on transforming the customer experience for its commercial, small business and residential customers as part of one program. This company has multiple utilities and thus process standardization is key with a focus on a high standard for customer experience, which will require capabilities such as omni-channel, customer relationship management, social and digital be included within the scope of capabilities to be enabled and delivered through this program. The company acknowledges that business and regulatory requirements are constantly changing requiring a delivery capability and technology platform that can respond quickly.

As such this company is hoping to achieve incremental business value by applying agile methods to deliver new capabilities aligning with planned business drivers. Achieving this incremental value approach requires that the customer solution be modular and leverage out of the box capabilities with standardized processes. The company intends to use a 'best in suite' software platform to achieve this.

At the time this document was written, this company had not started its implementation project and was still in its planning stage.

Recent implementation benchmarks:

Description	CIS	Conversion Approach	Other Scope	Year Implemented	Duration
2.7 M customer electric and gas	SAP	Single Deployment	BW (HANA) / AMI	2017	38 months
1.9 M customer gas and electric multijurisdictional	SAP	Single Deployment	AMI / BW	2015	28 Months
650k customer electric	Oracle	Single Deployment	Mobile, MDM, Asset Mgmt, WFM	2014	11 months
3.4 M customer water multijurisdictional	SAP	Phased	ERP / EAM / Click / GRC / BW	2013	38 months
3.2M customer gas multijurisdictional	SAP	Single Deployment	BW / Click / Syclo	2013	29 months
850,000 customer water multijurisdictional	Oracle	Phased		2011	23 months
1.2M customer gas and electric	Oracle	Single Deployment	MDM	2011	29 months
500k customer electric	SAP	Single Deployment	BW	2011	16 months
1.3M customer gas and electric multijurisdictional	SAP	Single Deployment	BW / Mobile	2009	23 months
2.6M* customer gas and electric multijurisdictional	SAP	Phased	BW	2003	36 months

SECTION 5: ALTERNATIVES AND SCENARIOS

Primary CIS Options

Option 1: Do Nothing - Remain on current legacy CIS applications
Current operations are adversely impacted on a routine basis by outages experienced by the legacy CRIS & CSS systems. This has a profound negative impact on customer service and satisfaction and does not support National Grid's objective to improve satisfaction and provide a more open platform for anticipated future customer interactions.

In addition, there is cost associated with spending considerable time maintaining and recovering the systems. Moving to a new system and platform would have a positive impact on total cost of ownership of these systems.

Another disadvantage of doing nothing is the inability to quickly respond and complete programming changes to reflect new rate and tariff changes in customer bills. This is viewed negatively by both the regulator and customer, and this would be improved with the implementation of a new CIS system.

There is also a productivity and customer service issue due to the need for CSRs to use multiple screens to navigate through several systems to handle customer inquiries about billing, payment and credit. Without a replacement of the current legacy systems, there is limited ability to improve current performance which, while it is good at meeting current regulatory standards, is not in line with aspirations to significantly improve customer service. Additionally, a new CIS will provide the functionality that will allow National Grid to meet expanding customer needs in the future.

Doing nothing is not an acceptable option, as delaying and prolonging the inevitable need to replace the current systems, which are nearing obsolescence and no longer able to provide reliable service, will only cause further exposure to operational failure, customer dissatisfaction, and regulatory scrutiny.

Option 2: Consolidate Legacy Systems
Following the 2001 National Grid acquisition of Niagara Mohawk, a Committee formed between National Grid and TMG Consulting determined, through a 2004 study, that only four CIS systems could handle the projected future size of National Grid. Those systems included SAP (IS-U or CR&B), SPL (now Oracle CC&B), Peace (now Hansen), and Accenture's Customer/1 (CSS). CSS had been in use by Niagara Mohawk since its 1999 conversion. In 2005, the Committee issued an RFP for a system integrator to lead the way in installing CSS into its three New England jurisdictions (Massachusetts, Rhode Island, and New Hampshire). This led to a successful 2008 integration. The strategy to consolidate all companies into CSS was re-examined several times and continued through the Rhode Island Gas (2012) and KED-Long Island (2013) companies. The final "CRIS to CSS" consolidation of KED-New York and Massachusetts Gas began in 2014. In 2015 the company decided to place a hold on the project to further assess these areas:

- Opportunities to significantly improve the customer offering as part of migrating away from the CRIS system
- Areas where the project should adapt to meet new board approved “Golden Rules” (following the US Foundations Project)
- Previous (KED-Long Island) conversion project outcomes
- Timing of the project in relation to AMR roll out in the KED-New York operating company
- Timing of the project in relation to rate case filing
- Projected “all-in” project costs versus value (e.g. CRIS support cost savings)

In 2016, a team was formed to decide on the most appropriate next step for the company’s CIS systems. The team decided not to re-start consolidation. Rather, the team decided that the most prudent course of action was to continue running CRIS and CSS systems to:

- Allow the Gas Business Enablement (GBE) and/or Customer Experience Transformation (CxT) projects to deliver and remove some of the functionality and complexity from CRIS and CSS
- Gain visibility of where the NY “Renewing the Energy Vision” (REV) and MA “Grid Modernization” (GridMod) were heading to better drive future billing system requirements

However, the team agreed that continuing to run the CRIS and CSS systems was not sustainable. Rather than continue consolidation at a future date, the company should move ahead into a new system strategy.

Option 3: Technology Replacement (recommended)
The recommended solution would replace the existing CRIS and CSS systems with a more modern CIS solution. The current system is aging and has limited functionality. It has experienced an increasing number of failures, and when it is out of service it adversely impacts the ability of
Revenue Cycle Services to serve customers. The company considered the option of converging CRIS into CSS as one system (option 2) and then enhancing CSS, but new technologies available allow for services to be provided more efficiently across all companies and jurisdictions.

As the market continues to evolve and new products and services associated with regulatory and market changes are required, the current legacy systems do not have the capability to meet changing needs. They will not enable the speed required to respond to new rates and tariffs, nor will they adapt to changing customer expectations. Customers want more options, more channels for transacting, and 24/7 availability across all residential, commercial and industrial customer segments. Technology is moving more interactions to digital solutions and applications, many of which cannot be timely integrated with the current legacy systems.

The company’s Customer Service Representatives do a very good job today, but giving them better tools that make current processes more efficient and effective will improve

productivity and customer service. In addition, a new CIS system initiative will improve customer data quality and help enable better integration with other IT and Customer projects. It will also allow the company to improve performance on regulatory cost of service measures and allow handling of more calls in a shorter amount of time. It will also help answer more customer questions on the first call, which has a strong correlation to improved customer satisfaction.

The current CIS option being considered would entail a multi-year project that will require close coordination so that as the new system is built and cut in it does not adversely impact the ability to serve customers. In addition, the pre-CIS work has endeavoured to ensure that several regulatory options have been considered and that the selection of the best alternative will result in the maximum recovery of this investment over the course of the project implementation and the life cycle of this new technology.

In assessing disadvantages, there is some risk related to non-recovery of the investment in regulatory proceedings. However, there have been an increasing number of successful regulatory filings across the country that have included the implementation of new CIS systems. As regulators discuss more market driven services, more distributed generation, more behind the meter demand management and efficiency products and services, the company needs to develop the capability to provide these services and provide a robust CIS system that enables these new transactions to be handled promptly.

The cost/benefit analysis for this option is included in Section 9 of this document.

Option 4: Outsourcing

An additional option considered outsourcing of services. Revenue Cycle Management operates the meter to cash workstreams which have a direct impact on customers and the company's bottom line. These are key "relationship-building" interactions with customers that often involve complex and sensitive matters. Being able to provide these services in an efficient, reliable and cost-effective manner is imperative. While there may be a cost-based case for outsourcing some parts of the revenue cycle process, it could only be effective with mature processes and systems delivering efficient and transportable service transactions. National Grid's existing systems are not all currently operating in this state.

National Grid's customer strategies depend upon healthy and positive relationships with customers. Outsourcing critical parts of the meter to cash workstreams would limit those relationships and in turn the company's opportunity to be the connected provider and enabler it aspires to be.

Regulators monitor the company's Revenue Cycle operations through service quality measures in place for billing, payment processing and credit & collections. Outsourcing critical services could put a strain on the company's ability to assure those performance standards.

Also from a regulatory perspective, the ability to promptly and accurately respond to what can be complex rate and tariff changes requires that rules and regulations be fully

understood and followed. Moving functions to an outsource model would require a continuous and complex training plan for contract resources.

Deployment Strategy Evaluation

Three approaches to a Customer System Replacement Deployment Approach are summarized below.

Single Deployment
Historically, many utility CIS conversions have been executed in a singular deployment (referred to as a "Big Bang") especially when treating a single operating company and/or single jurisdiction, and/or converting from a single source CIS legacy system. This generally is driven by total cost to implement (i.e. lowest), efficiency of delivery (i.e. least complex to orchestrate phase progression, scope control, integration cutovers and support model transitions), and schedule to deploy (i.e. fastest).

Benefits:

- Lowest cost (no throw away code or interfaces other than possible interim procedures while the system is down)
- Minimizes overall implementation timeline and duration of impact to the business and IT
- Condenses change management activities
- Designing end-to-end CIS functions mitigates the risk of missed requirements
- All users will be operating on the new system since all functionality is available and all future state business processes will be implemented across all brands, maximizing the benefits and promoting improved alignment
- Focused effort and team with fewer competing priorities (i.e. avoids the scenario of having part of the team stabilize the most recent deployment and part of the team prepare for the next)
- Shorter overall stabilization period
- Reduced interface / integration architecture complexity (i.e. avoiding the need for multiple interim integration architecture states), and relatively less impact on interfacing applications (GL, Web, Meter Reads, IVR etc.) as they only have to be modified once
- Reduced Interim procedures required – the processes required while either the system is down or while it is operating in an "in-between" state between releases
- Less conversion complexity – no longer converting into a "live" production system

Challenges

- Larger concentrated change management effort - higher number of trainers at peak Large peak volume of Business Readiness activities to prepare for Deploy: higher peak number of resources outside of project involved for single release conversion and deployment activities Larger potential volumes for manual workarounds or corrections (Service Orders, etc.)
- Larger deployment and support effort during the single release
- Larger impact to business operations if the deployment has issues

- Higher potential call center or back office spike associated with full customer base release since more customers impacted at once
- Higher concurrent work effort within the organization for recruiting, testing, interviewing and hiring for backfills.

Modular Deployment

When looking at the option of multiple "functional releases", there are a few basic approaches. The Modular Deployment approach is based on creating releases broken apart by functionality or technical modules. This may be larger pieces, such as billing or customer service, or may be broken down into smaller chunks - certain functional processes.

Benefits:

- Business value is delivered throughout the journey
- Builds change resilience earlier and incrementally
- "Day 2" support organization is engaged earlier
- Ability to deliver on "backlog" earlier

Challenges:

- The client organization must be prepared and able to change more frequently
- Focus management and training activities to define process based roadmap and release strategy
- Define success criteria and desired business outcomes by release upfront

Phased Deployment

For those that convert in phases, three models have emerged:

- One operating company /geography at a time – best for merged companies
- Group by Customer Class / Rate Type (e.g. residential, then commercial)
- Group by the legacy CIS system that will be replaced

Benefits

- The resources could gain knowledge and experience during the first go live that could be leveraged during the second go live
- The ability to better manage the roll out risks - discovery, remedy and resolve
- Potential for higher utilization of power users
- More seasoned trainers for the second go-live
- Lessons learned can be implemented and shared at second go-live
- Greater flexibility to tailor training and storm period(s) to lower call volume periods
- Trainer count is lower
- Spread the spend of capital dollars

Challenges

- Multiple outages and multiple change events
- Requires strict schedule adherence; concerns about sufficient resources
- Focus and organizational fatigue shifts from one go-live to the next
- Project team focus at risk during first storm and second deploy prep

- Potential increase in complaints volume in areas/divisions not yet converted
- The approach involves continuous change over an extended period
- Potential perception that support for first go-live is inadequate

Recommended Deployment Approach

Based on weighing the benefits and challenges for each approach, the following program deployment approach is recommended for National Grid:

- (Risk and Ease) First, align releases in order of legacy CIS, with the legacy CRIS systems migrated first, and then CSS systems. Taking on CRIS first also focuses only on gas operations.
- (Ease) Next, look at shared functionality and relative complexity by operating company, with the New England CSS companies next (introducing electric), and finally the most complex Niagara Mohawk companies.

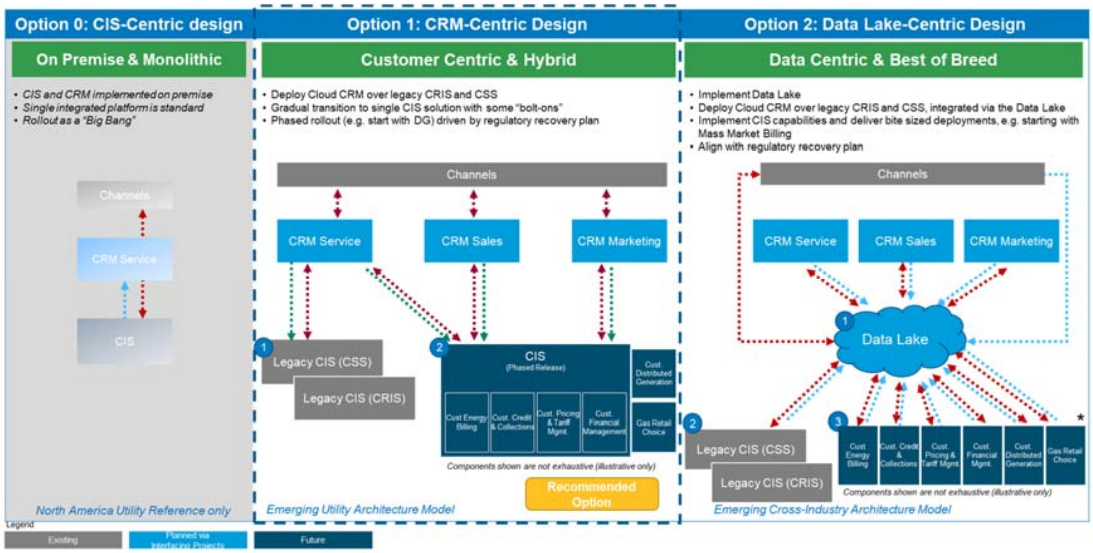
The proposed order of the operating companies is as follows:

- KeySpan Energy Delivery – NY City - Gas
- Boston and Essex - Gas
- Colonial Lowell and Cape - Gas
- KeySpan Energy Delivery – Long Island - Gas
- Massachusetts – Electric
- Nantucket - Electric
- Narragansett Electric Co – Gas & Electric
- Niagara Mohawk Power Company – Gas & Electric

The operating companies listed above may be grouped to reduce the total number of releases.

Technology Strategy Evaluation

National Grid's CIS planning team has evaluated several technology roadmap scenarios and product options as part of its technical assessment and business case evaluation for this project. In the first phase of planning (conducted in early 2017), a 'CRM-centric' design strategy was recommended. This recommendation was adopted by National Grid in its implementation approach for the in-flight GBE CRM project. It is recommended that any future CIS project undertaking follows this technology roadmap design strategy. In this second phase of CIS planning, the CRM-centric architecture strategy (see Option 1 as depicted below) was adopted for purposes of solution planning aligned to National Grid's broader customer and enterprise architecture strategy.



The CIS planning team conducted a vendor confirmation exercise during this Phase 2 period from January through March 2018 for purposes of due diligence to confirm this architecture strategy and to identify the risks and implications of adopting this model. It also evaluated leading CIS platform providers in the market to confirm National Grid's technology product strategy for core CIS (i.e. best-of-breed or best-of-suite).

This exercise considered: 1) CRM vendors, 2) CIS vendors, and 3) CIS bolt-ons. The results of the vendor confirmation exercise confirmed that the customer platform architecture strategy set in 2017 is reasonable for ongoing solution planning. It also recommends that National Grid adopt a best-in-suite core CIS platform strategy augmented with a few select bolt-ons coupled with incremental capability developments on the cloud CRM platform already being established through the GBE program. The two leading providers for best-in-suite core CIS platforms for utilities are SAP and Oracle. The capabilities of these products and the detailed results of the vendor confirmation exercise are available in the Appendix of this document.

SECTION 6: RECOMMENDED SOLUTION

Recommended Solution

It is recommended to re-platform National Grid's Customer Service systems with a commercial off the shelf (COTS), market leading platform through a capitalized software project (CIS Replacement). The CIS Replacement project would implement a new account management and billing system that performs several critical customer-service-related functions, such as generating customer bills and providing account management, improved customer care, credit and collections and account receivables. The project is needed to meet changing customer needs and to replace legacy systems that are outdated, obsolete, costly to maintain, and have increasing risk of failure.

The basis for this recommendation includes the following assessed positive outcomes:

- Decommissioning of the obsolete, mainframe-based CRIS/CSS and related subsystems,
- Discontinuing the reliance on aging infrastructure and applications software languages that are no longer being adapted or widely used in industry,
- Alleviating system failure risks and ongoing upgrade and maintenance costs associated with continuing the use of obsolete and aging infrastructure,
- Reducing the rate and impact of customer system reliability incidents,
- Providing more efficient ways for customers to interact with the company,
- Lowering operating costs,
- Controlling future costs to implement new, progressive rates; customer programs; and other regulatory or market driven requirements;
- Laying a foundation for future ease of integration of the CIS sub ledger with the company's ERP and finance strategy
- Laying a foundation for future ease of CIS integration with AMI technologies and enablement of AMI-driven capabilities,
- Reducing risk of resource scarcity (i.e. technical skills for a proprietary system and dated technology).

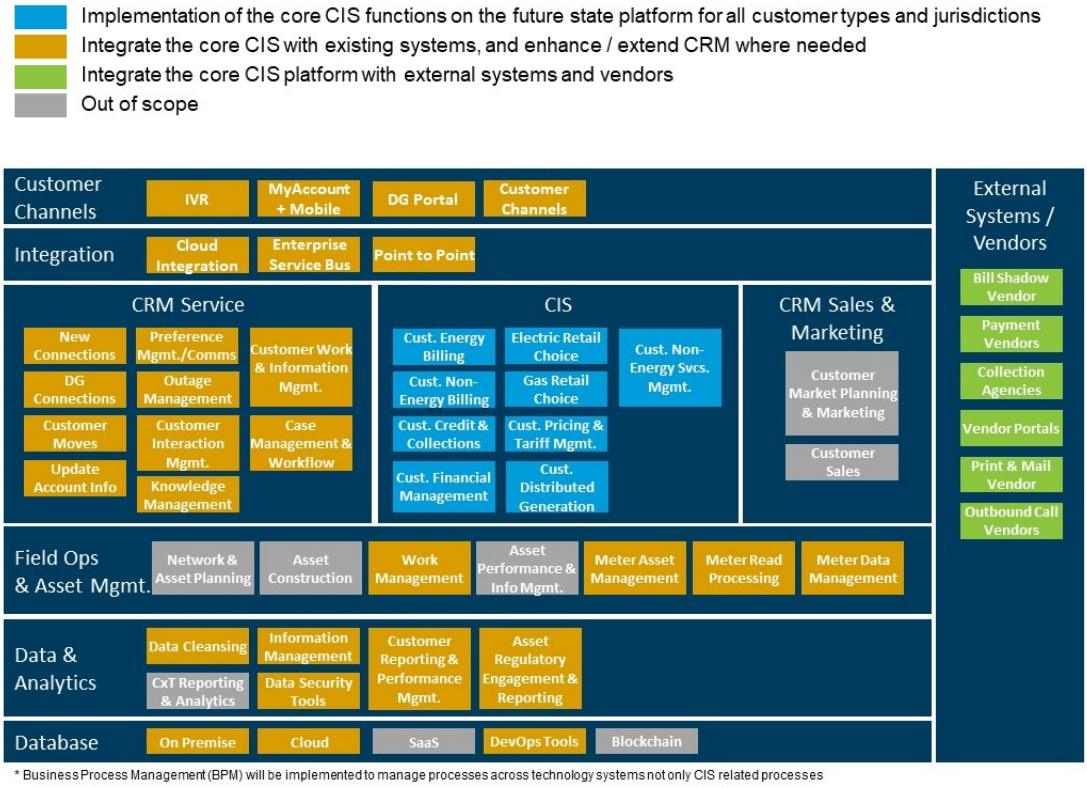
National Grid's customer projects (including GBE and CxT) aim to elevate the company's customer service model by offering improvements in: (1) customer accessibility, (2) intelligent delivery of energy advisory services and energy management solutions, and (3) more effective customer interactions. This model forms the foundation for simplifying the customer experience and advancing operational and service excellence. By modernizing back-end revenue cycle operations processes and systems through the CIS replacement project, National Grid would establish a stronger foundation for the Customer Service technology portfolio to realize the company's vision for enabling these future needs of customers to become more active in their energy solutions. This investment in CIS is critical to achieve the Customer Service strategy, and contributes to overall IS objectives for simplification of customer systems architecture, streamlining of integrations and improvement of customer data quality reducing system exceptions and management of obsolete software.

National Grid conducted a full CIS assessment as part of its software RFP process to select the vendor that best meets National Grid's end objectives and future state requirements.

Integration and synergies with SAP's ERP system were components of the evaluation. Companies with existing SAP ERP systems have valued the ease of integration between SAP ERP and SAP CIS. In addition, the existing familiarity and investment in the SAP ecosystem favors additional SAP applications such as CIS.

Proposed Scope

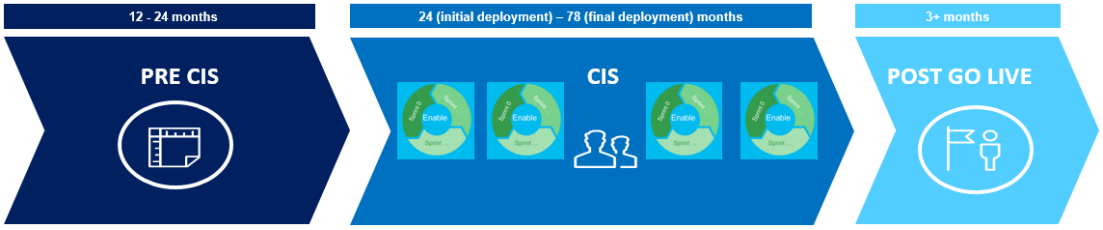
Below is a diagram showing the main components of the proposed scope of the CIS replacement project. The scope depicted here summarily corresponds to the business case estimates.



* Business Process Management (BPM) will be implemented to manage processes across technology systems not only CIS related processes

Proposed Implementation Strategy

To implement the end to end proposed scope of this program, three (3) main stages of progression are involved:



Stage 1: Pre-CIS or CIS Planning. This stage is conducted in three (3) progressive steps. In this stage, the company is focused on:

Pre CIS Phase 1: Developing its future state customer service strategy and technology roadmap. The outcome of this step is alignment from company leadership on the case for change.

Pre CIS Phase 2: Developing a high level business case and benefit/cost model framework, assessment of the company's regulatory strategy and financing options, conducting further technology vendor assessments, and beginning to design the future program organizational model. The outcome of this step is approval from the CPP Preview Committee and Sanctioning Committee (based primarily on this capital project business case artifact) to proceed with project planning and preparatory activities including the regulatory filing activities that would seek Commission approval in each jurisdiction for rate recovery on the estimated project costs.

Pre CIS Phase 3: Completing detailed benefit/cost model analysis and data collection, preparing the regulatory filings by jurisdiction in accordance with the final regulatory strategy, preparing and executing the Requests for Proposal (RFP) and selection of CIS Technology Products and Implementation Services. Other key activities in this step are:

- continued analysis of the target solution architecture (emphasizing integration architecture considerations especially given in-flight projects)
- identification and assessment of project risks and mitigations
- legacy data profiling with the objective to ascertain quality and cleansing priorities
- preparing and executing data cleansing priorities
- people development and talent strategy planning
- establishing and refining the program governance model and operating model (ways of working) in alignment with other critical in-flight initiatives impacting the company's customers and customer operations.

Stage 2: Implement CIS

This program will be a multi-year journey that involves many aspects of the business and IS. During the implementation stage, the following general activities are conducted:

- Establish project delivery methods with a focus on agile methods

- Refine requirements, solution component inventory, configuration items and solution blueprint
- Refine the deployment plan and release strategy factoring in iterative releases and coordination of operating company specific deployments
- Assess change impacts and build change plan
- Prepare and execute data conversion
- Design and refactor integration services and integration architecture considering other in-flight projects (e.g. GBE, CxT, and AMI)
- Build, configure and test application by release
- Define and build system landscape
- Install project and production environments
- Mobilize and engage change network and stakeholders
- Design and deploy training
- Create deployment plan and go-live criteria
- Deploy application to production and convert data.

Stage 3: CIS Post Go-live support
Given the multiple deployments expected over the course of the program, this stage will co-exist with stage 2 for a period of time. Post go live support considers for example:

- Staffing of capacity services during the 'storm' to sustain operational performance in the event of productivity dips due to learning curve and/or temporary heightened call volume/exception volumes
- Management of priorities, events, incidents, etc.
- Resource planning to balance needs of operations during stabilization of earlier deployments with ongoing project activities and deployments
- Maintenance of the knowledge repository
- Management of ongoing and target SLA's and continuous improvement
- Management of ongoing releases and system operations
- Maintenance of product roadmaps (e.g. support packs, enhancement packs, application updates for SaaS, technical upgrades).

Deployment Strategy Considerations

Several deployment strategies have been considered for this program, factoring in the complexities of integrating and maintaining multiple legacy CIS systems, different commodity types, and the degree of business rules for each company.

A 3-release schedule combining all gas-only companies into the 1st release, Mass Electric and RI (Gas & Electric) into a 2nd release, and NMPC (Gas & Electric) into a 3rd release has been considered that can potentially reduce the costs by sharing implementation, deployment, and stabilization work efforts.

Release 1 will be for KEDNY, KEDLI, and MA Gas companies; however, it assumes approximately 60-70% functionality of all jurisdictions will be built during this release. The remaining functionality for the other gas and electric companies will be built in subsequent releases.

Release 2 will be for MA Electric and RI Gas & Electric companies. These have been split into their own release to minimize risks with data conversion and operational readiness testing. Any common electric functionality will be built in Release 2.

Release 3 will be for Niagara Mohawk due to complexity and operational differences.

Key Activities

The table below provides a high-level overview of some of the key activities that will take place during the phases for each Project Release.

Phase	Key Activities
Plan Phase	- Mobilize resources
Analyse / Common Design	- Process workshops and documentation - Sprint planning - Conduct story mapping - Define Conversion Approach
Build / Test	- Sprint Cycles by process area - Plan test - Assembly test - Product / integration test - Plan deployment and stabilization
Operational Readiness Test and Deploy	- Operational Readiness Test execution - Conversion - Cutover
Stabilization	- Support and Defect fix
Transition for Support to IS / Application Maintenance	- Transition planning - Transition execution

Work Effort Estimate

Using a bottoms-up approach, future capabilities (3,299 as captured in pre-CIS planning phases) and a current portfolio of 219 applications were analysed on their fit / gap against the proposed CIS and CRM platforms. A list of solution components (RICEFW: Reports, Interfaces, Conversions, Enhancements, Form, Workflows) for the CIS and Widgets (Configuration objects, interfaces, pages, workflows) for the CRM were identified with complexity levels to estimate the total work effort and resources required for the project.

CIS	Complexity			
RICEFW	High	Medium	Simple	Total
Conversion	15	25	15	55
Enhancement	10	119	15	144
Form	2	6	14	22
Interface	29	171	61	261
Reports*	111	178	12	51
Workflow	4			4
Grand Total	**71**	**349**	**117**	**537**

*250 reports (100 high complexity) and (150 medium complexity) were added on top of what was determined by the fit/gap assessment, to account for National Grid's requirements for additional standard and descriptive analytics reporting.

CRM	Complexity		
Widgets	High	medium	Total
configuration objects		87	87
interfaces inbound	11	74	85
interfaces outbound	11	55	66
SFDC application pages		98	98
Workflows		66	66
Grand Total	**22**	**380**	**402**

Resource Needs

The estimating factors described above (also see Section 3 Assumptions and Dependencies), were used to compute an estimated work day effort using Accenture's Delivery Methods Estimating Tools for SAP CIS and SFDC CRM. These field-tested tools were developed and refined by Accenture using project actual results from hundreds of SAP CIS and SFDC CRM implementations. Accenture maintains these estimating tools on a quarterly basis. Accenture's computations yielded an estimated workday effort based on the project activities expected to be in scope as described above. This estimate was then converted into a projected Resource Plan.

Note: These resource projections will be modified as National Grid validates and adjusts its deployment scenario, delivery methodology, and technology products. The resource effort projections below do not include trainers (training delivery), capacity services staff augmentation that is expected to support go-live event periods, operational backfill, or stabilization periods.

Row Labels	Effort (Hours)	Work Days
Analytics	84,320	10,540
Conversion	15,360	1,920
Data Cleansing	211,360	26,420
Deployment	9,760	1,220
Development	238,720	29,840
Integration	118,880	14,860
OCM (Organization Change Management)	133,760	16,720
PMO	209,920	26,240
Process Design	230,560	28,820
Tech Arch	120,320	15,040
Test	199,840	24,980
Legacy System Updates	147,520	18,440
Vendor System Updates (coordination)	129,600	16,200
CRM retrofitting and enhancements	383,840	47,980
CRM change management	82,560	10,320
Grand Total	**2,316,320**	**289,540**

SECTION 7: CUSTOMER IMPACT

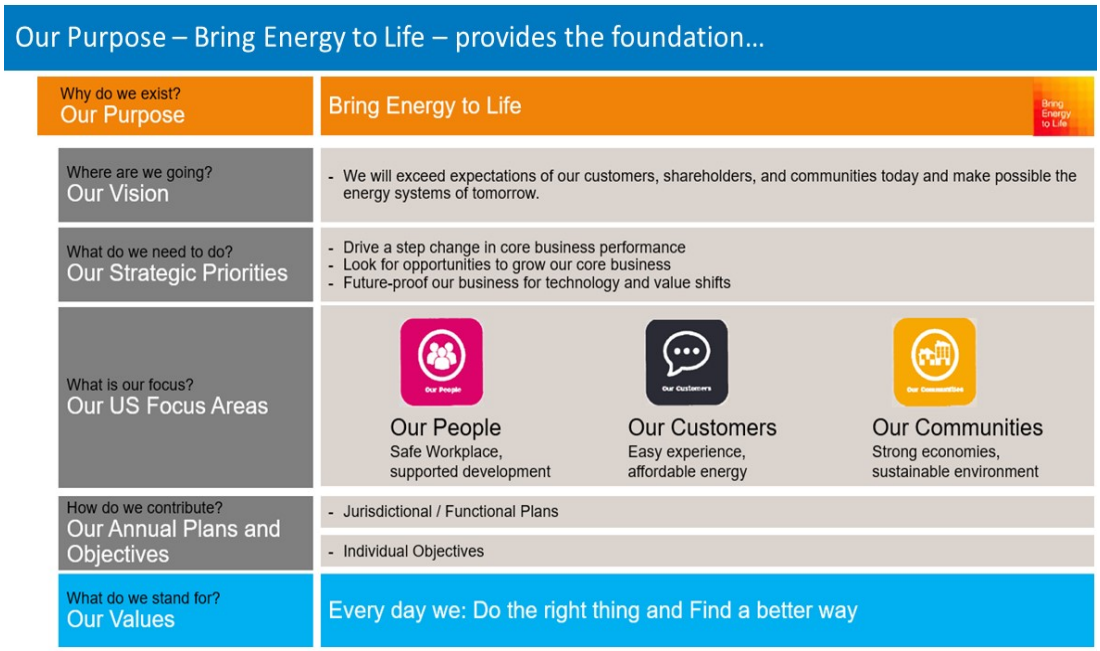
This project, as currently proposed, would impact National Grid's 20 million customers served including its 7 million customer service accounts and potential future customers.

Stakeholders in the Customer Experience

Regulators
Suppliers
Agencies
3rd Parties (e.g. Banks, Contractors, Intermediaries)

Customer Ownership

The question is not "who owns the customer" but "who is responsible for the customer" (RACI).
The answer is everyone in National Grid has responsibility for our customers.



National Grid Aspiration: Design and deliver an effortless customer experience

- Implement a 360-degree view of the customers' relationships with us
- Enable all employees (contact center, back office, field) with relevant and appropriate view of the customer to make informed decisions
- Establish capabilities for customer insight and analytics to utilize for segmentation, tailored solutions, as well as preemptive resolution of issues before they reach the customer

- Optimize the number of channels, balancing the need for customer choice with the ability to consistently deliver value and an effortless experience
- Promote use of digital channels as the primary channel, enabling the contact center to focus on handling higher touch / more complex issues
- Implement a consolidated view of Voice of the Customer (VoC) using one platform and process across channels
- Utilize employee insights as well as customer insights to build the VoC and include a closed loop for follow up with the customers as needed
- Reduced exceptions and handle times
- Consolidate gas and electric bills for Mass and RI
- Reduce system down time (from Seibel outages and maintenance)
- Improved operational efficiency should improve CSAT and JD Power scores.

What specifically does CIS enable for customers?

- Combine gas + electric bills for Mass and RI where allowed and appropriate
- Supports moving more customers to digital transactions
- Improved customer engagement/experience increases customer satisfaction
- Enables meeting evolving customer demands (e.g. solar, DG, digital)
- Rate modelling can be completed more efficiently
- Opportunity to promote new products and services and grow revenue
- Greater overall system availability (CRIS) resulting in more real-time transaction processing

SECTION 8: RISKS

Current Risks:

A primary driver for the CIS Implementation is to reduce risk. Specific examples of risks related to the current CIS are listed in section 1 and summarized here:

- Technology obsolescence
- Reduced customer satisfaction due to system unavailability and downtime
- Extended cycle times to implement new rates
- Unfulfilled customer demands for new contact options
- High relative cost of manual processes

Risk Register

This program will also support mitigation of the following US Regional Risks across all jurisdictions and operating companies:

- 8: Risk to the resilience of business applications and the IS System
- 10: Failure to effectively respond to threats and opportunities presented by external changes (climate, customer expectations, technologies, competition, etc.).
- 12: Failure to operate with a sufficiently mature business data management capability.

Project Risks

The following additional project level Risks and Mitigations have been identified:

Risk "If Statement"	Risk "Then Statement"	Risk Response Strategy	
Project does not align with other customer domain projects nor align with future state customer goals	Customer domain programs do not deliver compatible or complete capabilities and future customer state is not achieved	Avoid	Conduct preproject framing and requirements study to define the future state customer experience, business architecture, and technology required to deliver the solution.
Project staffing will need be at planned levels in order to support project activities and the associated project schedule and go-live date.	Without the planned level of staffing, activities will not move at expected pace and schedule will not be met.	Avoid	Identify specific individuals to project positions, reconcile will SI staffing plans and contract with third-party client side firms to fill additional roles.
System Integrator does not staff the project with experienced resources, specifically related to the leadership roles and project management.	This would result in missed and/or improper technical / functional components.	Avoid	During the SI evaluation, experience of the key staff members assigned to the project will be evaluated and included as part of the SI selection. Replacement of key resources will also be included as part of the commercial agreements.
Third party firms to fill business and IT positions as required by the SI are not established.	This will limit the System Integrator's ability to meet project deadlines.	Reduce	During procurement, once the SI of choice is selected and scope/confirmation activities are completed, the National Grid staffing requirements will have been identified and National Grid will have to assign names to the required project positions. If National Grid is unable to staff various project positions it will need to pursue additional staff from third party firms. This will require a procurement effort which will need to occur in a timely manner in order to be ready for project start-up and during the project.
A Project Management Office experienced in complex program delivery is not established.	This would result in missed goals function-related and budget-related. Stakeholders may lose confidence in program's ability to meet goals.	Avoid	A project management office is part of project scope. Staffing of the program management office is part of the procurement process and will be coordinated with National Grid pre-project resourcing efforts.
The team does not have effective physical project workspace available either as co-located or at multiple locations.	As a result, the team is unable to operate, communicate, and collaborate effectively.	Reduce	Primary project participants from the SI/SW and National Grid will be co-located in a central project location and virtualization solution has been deployed.

Risk "If Statement"	Risk "Then Statement"	Risk Response Strategy	
National Grid is embarking on an industry-wide first by comingling SAP CR&B in a comprehensive solution.	The lack of a proven blue print from another utility to work from may result in lengthy delays, change orders, budget issues, resource problems and project cancellation.	Accept	Procurement process has identified known capabilities for the project and validated these with the software vendor SAP and the SI with their background and experiences. Lessons learned from GBE will be acted upon and internal integration team will thoroughly detail, direct, implement and oversee project.
SAP CR&B license negotiating and contracting schedule is yet to be established.	This could result in the lack of appropriate software and services in place for the project.	Avoid	Establish an SAP CR&B negotiation strategy and license schedule which integrates and aligns with Global negotiation
National Grid does not properly estimate the time and expense of the project within defined scope.	This could cause the company to require additional funds to cover shortfalls which may not be recoverable via rate cases.	Reduce	The initial budget was developed by a consulting firm with a lot of experience implementing CIS solutions for utilities. National Grid has socialized these figures and has created a financial model. There are a number of factors which need to be considered in terms of this budget, including: 1) dollars associated with taking over delivery of Salesforce capabilities to toward an actual "end state" for National Grid, 2) the impact of following an Agile based approach versus a traditional Waterfall approach to development, 3) the application of TMG's industry-wide pricing metrics to National Grids implementation dollars, which currently indicate that the financial model numbers are low. Once the SI proposals are received the financial model will be updated, and these other considerations will be addressed.
Specific development work in Salesforce is not fully identified and budgeted.	This would result in an inaccurate scope, budget and timeline and result in the project needing to request additional to funds to deploy the comprehensive solution.	Reduce	The amount of work that GBE is going to leave on the table for CIS to pick up and finish is unknown at this time. Estimates for this remaining development work will need to be made based upon the final end state delivered by GBE. This will be clarified during the scoping sessions of the procurement.
The SI recommends options regarding the implementation of Salesforce using SF as system of record rather than CIS.	This violates BMS data standards and can have a negative effect on data accuracy and ultimately customer experience.	Avoid	The option to be pursued in the utilization and implementation of Salesforce/GBE, vs Salesforce/CR&B needs to be discussed and agreed to in a scoping session.
The System Integrator and NG do not complete and/or agree on a comprehensive joint RACI for successful project completion.	This can result in the SI blaming National Grid (or vice-versa) for shortfalls and avoiding responsibility for their own failures.	Avoid	The procurement process is driving toward making the System Integrator of Choice totally responsible for successful delivery of the Comprehensive CIS Solution as it is defined in the RFP.
ADAM contract pricing restrictions reduce the availability of qualified resources.	This can cause errors with both technical and functional deliverables. It may also cause the project to miss deadlines.	Reduce	Establish a framework that allows for a new negotiated rate card specific to project determined key skill sets
Technical environment management is not appropriately defined and/or managed.	This can cause delays in the project, missed deadlines, and cost overruns.	Avoid	Technical architecture services regarding development and the management of environments is being defined during procurement and will be documented in the statement of work. This will be monitored during implementation by the PMO and QA functions.
The CIS program is not approved timely in rate cases in accordance with program revenue requirements and regulatory schedule.	The program could experience a loss or delay in investment recovery due to timing or partial scope denial.	Reduce	Implementing a new CIS is a necessary and prudent action and the company will file for recovery in each rate plan. The program took into account the company's current filing plan at the point of modeling anticipated recovery. This risk will be continually monitored by the Transformation Office's Program Assurance sub-team. If Program Assurance becomes aware of a company direction to modify its filing plan, or a certain filing is partially or fully denied by a state regulator, it will discuss the recovery impact with Regulatory and Finance teams and make a recommendation to the program's Steering Committee. Recommended actions could include acceptance of recovery reduction, program scope and investment modification, timeline modification, or work cessation.

SECTION 9: FINANCIALS

Costs Summary

A comprehensive financial model has been constructed to estimate the various cost drivers of the CIS program. Major cost areas broken into Operating and Capital expense are shown below. **This view spans only the NMPC Gas and Electric operating companies.** This estimate is pre-negotiation of contracted System Integration costs.

NMPC Gas Estimated Project Costs		
Total Cap Ex	$	35,501,165
Total Op Ex	$	19,000,694
Total Project Costs	$	54,501,859
AFUDC	$	6,582,691
Total Costs	$	61,084,550

NMPC Electric Estimated Project Costs		
Total Cap Ex	$	95,159,104
Total Op Ex	$	50,930,413
Total Project Costs	$	146,089,516
AFUDC	$	17,644,575
Total Costs	$	163,734,091

Anticipated Effect on System Operations Expense

A 10-year look at the overall effect on system (IT) operations expense is shown below. Years 5 and 7 are the first years of operating the new CIS in production for other companies (releases 1 and 2) which has a temporary negative effect on NMPC. Between years 5 and 9, NMPC is still operating on the CSS system and paying a higher percentage of its cost. In year 9 when the CSS is retired, NMPC begins to only pay its share for the new CIS.

10-Year Projection on RTB - NMPC Gas

	Year 1 FY21	Year 2 FY22	Year 3 FY23	Year 4 FY24	Year 5 FY25	Year 6 FY26	Year 7 FY27	Year 8 FY28	Year 9 FY29	Year 10 FY30
Enduring	$222,621	$222,621	$222,621	$222,621	$222,621	$222,621	$222,621	$222,621	$222,621	$222,621
Reducing	$1,125,990	$1,125,990	$1,125,990	$1,125,990	$1,245,355	$1,320,375	$2,230,694	$2,534,134	$633,533	$0
New	$0	$0	$0	$0	$6,505	$0	$0	$0	$547,226	$718,395
Total	$1,348,611	$1,348,611	$1,348,611	$1,348,611	$1,474,480	$1,542,996	$2,453,315	$2,756,755	$1,403,381	$941,016
Savings	$0	$0	$0	$0	($125,870)	($194,386)	($1,104,705)	($1,408,144)	($54,770)	$407,595

10-Year Projection on RTB - NMPC Electric

	Year 1 FY21	Year 2 FY22	Year 3 FY23	Year 4 FY24	Year 5 FY25	Year 6 FY26	Year 7 FY27	Year 8 FY28	Year 9 FY29	Year 10 FY30
Enduring	$596,724	$596,724	$596,724	$596,724	$596,724	$596,724	$596,724	$596,724	$596,724	$596,724
Reducing	$3,018,159	$3,018,159	$3,018,159	$3,018,159	$3,338,111	$3,539,200	$5,979,265	$6,792,620	$1,698,155	$0
New	$0	$0	$0	$0	$17,435	$0	$0	$0	$1,466,812	$1,925,622
Total	$3,614,883	$3,614,883	$3,614,883	$3,614,883	$3,952,271	$4,135,924	$6,575,989	$7,389,344	$3,761,692	$2,522,346
Savings	$0	$0	$0	$0	($337,387)	($521,041)	($2,961,106)	($3,774,461)	($146,808)	$1,092,538

Benefits Summary

National Grid is committed to delivering an effortless customer experience through choice and flexibility. The Company recognizes that it must transform its aging, inflexible, and disparate CIS platforms to enable this vision. National Grid's Comprehensive CIS Solution is a foundation to this aspiration, integrated with a new engagement center – the Salesforce Customer Relationship Management (CRM) system. Customer-facing channel capabilities are enabled and enhanced through the Customer Experience Transformation (CxT) program.

National Grid's Comprehensive CIS Solution will not only replace the aging CIS platforms but deliver an advanced reporting and analytics platform and many other customer and operational benefits highlighted here.

- Full and consistent value realization from the new Salesforce CRM. As the new "Center of Customer Engagement", the CRM and CIS working together will ensure:
  - A 360 degree view of each customer and all related activity
  - Optimized customer interactions with personalization, proactive notifications through preferred channels
  - Company programs, products, and services used by and available to customers – beyond core commodities that customers value
  - Delivering on goals of "Trust and Ease"

- Significantly more flexible integration to customer and business partner channels, programs, and services of today and the future including:
  - Innovative Bill Pay options and services
  - Unified Energy Marketplace providing access to new customer products and services
  - Distributed Generation (DG) and Community DG providers
  - Green Button Connect

- Increased availability leading to improved channel service performance

- IT operations cost reduction – elimination of two mainframe-based legacy systems

- Billing, Credit & Collections, Payments Processing, Supplier Services, Accounts Maintenance expense reductions
  - Elimination of manual billing
  - Elimination of diverted bill mailings (CRIS – KEDNY)
  - Numerous Payment Processing efficiencies - cross-company transfers, cash balancing, mis-applied payments (suspense), automated returned payments
  - Field Collection account selection efficiencies
  - Collection agency management efficiencies
  - Supplier Services process efficiencies

- Improved system data retention, and archiving

- Single set of critical system integrations through a robust API service layer
- Best in class software fully supported and upgraded through a PaaS + AMS infrastructure and agreement
- Advanced analytics, rate development and modeling capabilities
- Significant gain in agility to develop and deliver new programs and services

The full project detailed benefits assessment is available separately and is divided into three categories:

- "Type 1" benefits are those that will result in direct, quantifiable financial impacts (cost reduction, revenue growth, cash flow, or profit)
- "Type 2" benefits are those that directly create an improvement in process, productivity, quality, cost control/avoidance, controls environment, or operations (business or technical). Type 2 benefits do not directly create a type 1 benefit
- "Type 3" benefits are those that indirectly enable a type 1 or type 2 benefit, create customer / employee satisfaction, or improve the company's brand reputation / regulator position

Recovery Strategy – A critical component to benefit realization:

Quantifiable benefits and NPV for this investment will not make the case for this investment. This makes successful recovery a primary driver of this business case, and we have worked in tandem with our regulatory experts throughout Phase 2 of the project to create a set of regulatory recovery options to be used as the basis for developing our regulatory strategy.

In Section 4 we evaluated best practices, approaches and outcomes achieved by other similar sized utilities that operate in multiple regulatory jurisdictions. We have seen a generally positive regulatory environment for investments of this type. While each jurisdiction has its own nuances, the convergence of customer demands, market changes, increased incidence of failure of legacy CIS systems and continued regulatory scrutiny has helped to support proactive replacement of these customer facing systems.

Achieving the benefits identified in this business case, and the targeted recovery of and return on investment make this investment prudent. The anticipated improvements in customer service and customer satisfaction further support the approval of this project.

SECTION 10: PROGRAM COMPLIANCE WITH THE GOLDEN RULES AND CRITICAL SUCCESS FACTORS

Below is a summary of how the "golden rules of project management execution" will be addressed.

Area	Basis/Comment	Plan to Address
Active Sponsorship	Program lead and project/ initiative leads.	Have current sponsor who is committed to the success of this program (Gregg Knight – Chief Customer Officer). Currently refining solution plans and building engagement with Finance, Regulatory, Information Systems and members of the executive committee. Further stakeholdership will be established with other interdependent project teams and departments. Program Delivery leads from National Grid and SI will be fully engaged, accountable and working side by side over business and technical project teams. Program success to be included in performance objectives of sponsor, program lead and workstream leads representing the business and IS.
Scope Management	Timeline for implementation of each project in the program.	Program timeline drafted capturing estimated timing of phases and deployment events. This timeline will be refined during Pre-CIS Phase 3 and socialized with key stakeholders to obtain feedback and alignment as the deployment strategy is iteratively improved. During Pre-CIS Phase 2, the CIS team began documenting scope definition in terms of business capabilities, functional requirements, solution component inventory, interfacing system inventory, data conversion inventory, and environment needs. As the program moves into Pre-CIS Phase 3, the program team will continue to detail these scope definition artifacts and augment them as additional information is discovered and decisions are made. Business capabilities will also be associated to the expected business outcomes that align to the business case objectives. These scope definition artifacts will provide a clear basis for scope management before the program implementation starts at which time a formal change control process is established. Scope will actively be managed during project delivery by using a dedicated project management office and regular status reporting and issue tracking at all levels. Scope changes should be assessed based on their cost vs business value drivers such as regulatory, legal, increases process efficiency, reduces manual work volumes, etc. Project Plans for the implementation will include detailed activities for Mobilization, transition between stages, detailed cutover plans, post go-live/stabilization activities and transition to ongoing support.
Clear Success Criteria	Defined and measurable	High level timeline and value drivers have been identified. Detailed benefits and KPIs will be quantified during Pre-CIS Phase 3 and signed off by senior management. Project success also means adhering to requirements, cost targets, deployment dates and rate case filings and recovery. These will collaboratively be managed by the project management office, delivery leads and program sponsors to ensure and measure value realized. It is recommended to select an SI that brings a proven Go Live Readiness Criteria and Transition to Run framework and experience with measurement across multiple domains and facets of the implementation and deployment. Per

		best practice, Go Live Readiness Criteria should be owned by multiple members of the steering committee as appropriate; this enforces 'in the boat' mentality across senior leadership. The program may also consider including a dedicated value realization resource within the PMO that focuses on the measurement of KPIs and business outcomes aligned to the business case. This is a practice that is increasingly becoming common in the industry especially for utilities measured by their return on investment.
Rigorous Stage Gating	Stage gating ambition articulated but criteria still to be defined.	Clear entry and exit criteria between stage gates will be defined. The timing to meet criteria and value thresholds of the criteria themselves will be partly driven by the hybrid-agile delivery model. Effective transitions between project phases and between releases (operating companies) will be critical to program success. Detailed project plans, deployment plans and stage gate criteria will be built and tightly integrated across workstream leads. As mentioned above, it is critical to employ a proven Go-Live Readiness Criteria and Transition to Run framework that has been successfully utilized at other utilities.
Business Change/ Readiness	Change mgmt. and readiness is part of scope, timeline and resource plan.	The business case captures the effort and estimated costs for a robust Change Management approach and best practice levels of resourcing to provide for Learning/Training investments that will prepare National Grid's users for a successful transition to a modern and harmonized CIS. The program team has a plan to develop a formal Change Management Office with clear ownership. Stakeholders to be engaged early to understand impacts and build awareness and support. Includes impact assessments to processes, organizations, communications, training, readiness assessments, detailed change tracking, etc. Lessons learned and success stories in early deployments can be used to shape later deployments and build engagement among business users. It is the goal of the CIS program to make 'advocates' of the trainers and users of the first new CIS deployment thus creating a more prepared and enthusiastic workforce for each subsequent deployment.
Good Governance Controls/ Planning	Governance in place. Plan to address controls (deficiencies or maintenance).	Current discussions are already in progress with senior leadership across the Business (CFO and Customer organizations) and IS to formulate an effective governance model. Program level governance to be established with clear schedule and process for raising issues, risks and making changes. Includes Delivery Leads, Sponsors and Steering Committee. May also include external QA checks. Additional consideration will be required to coordinate across GBE, CxT, AMI, CIS.
Partner Management	Anticipated consultants or outsourcing, and procurement plan to achieve.	Following normal procurement procedures for vendors, contractors, internal staff allocation, partners, etc. Detailed RFP issued and rigorous selection process for SI. This will likely include interviews, in person presentations, reference client site visits, and resume reviews for contracted staff throughout the project to obtain the best resources available from each partner. National Grid may consider contractual and commercial arrangements with its selected partners that increase partner accountability for controllable outcomes. Consistently evaluating and balancing workload, skills, costs, schedule. Additional effort required to effectively share resources across projects and programs. High level estimates are set for internal/external resource splits and labor + expense costs.

High Performance Team	Resourcing plan, including cross functional team members.	An initial resource plan (role level) has been created based on the bottoms up estimate in Pre-CIS Phase 2. An inventory of CIS implementation program roles has also been created for consideration. These work products provide a means to begin developing a CIS program talent strategy in harmony with National Grid's Customer, Revenue Cycle, and IS organizational strategies. Per best practice, it is recommended to identify where possible, high performing resources who would play long term roles in these primary impacted organizations and recruit them for program delivery roles (part time or full time) with their future role in mind so that they can develop the right skills and experiences through the program. Full resource plans will be realized and continually managed to optimize teams based on program phase. Delivery leads, PMO and Sponsors will assure right skills and capabilities to achieve milestones & timelines established in project plans. Delivery leads and sponsors to actively maintain program vision and energy to drive collaboration across teams and resource pools. Teams to be co-located where possible and SME's to be leveraged across teams and across deployments to share knowledge.

APPENDIX

Vendor Evaluation

As part of the due diligence process, several software vendors were evaluated for the future CIS platform. The evaluation of the CIS software vendors provides validation and guidance to the overall direction of the solution.

Oracle and SAP responded to the CIS tender for the replacement of the current US customer information system software applications. Further negotiation ensued with each and they were asked to provide costs to effectively replicate a SaaS solution including hosting, licence, licence maintenance as well as application and hardware platform managed services. Additional value opportunities across the wider enterprise and relationship were also explored.

The evaluation approach can be summarized by these activities:

- Completed technical evaluation of the offerings and how they meet specific NG requirements
- Negotiate the lowest cost of ownership options with each vendor
- Include commitment to wider, leveraged benefits, terms and principles for enterprise contract / relationship
- 10 year TCO used to compare commercial offers
- Down-select to one vendor in the second week of January, 2019
- Negotiate the contract for CIS and/or a wider enterprise contract in the months following that down-select

Outcome:

The CIS Steering group agreed the decision to down select should rest with the Program and the team has chosen SAP as the best fit technically and commercially.

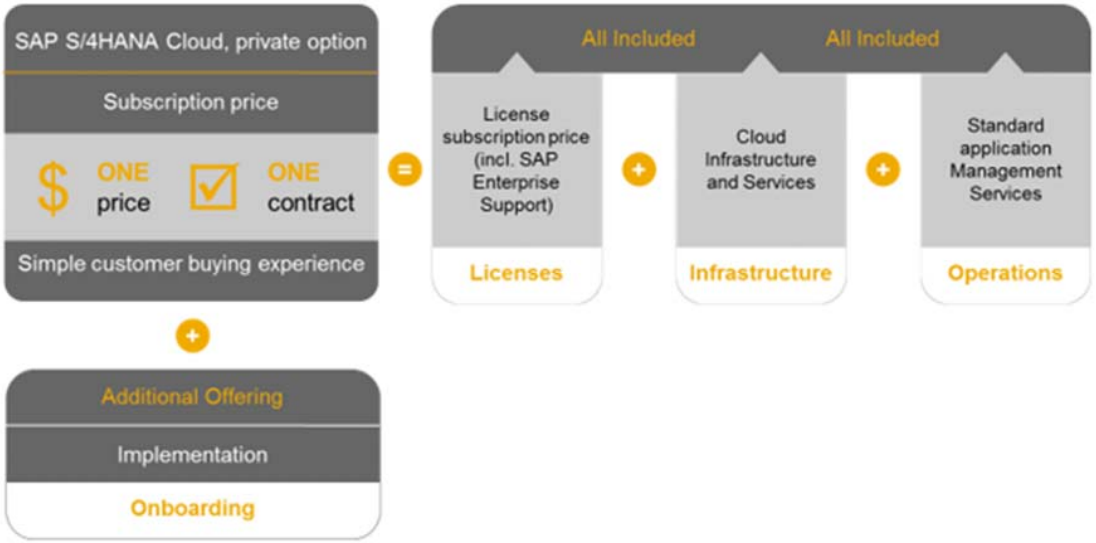
This decision allowed the SI (System Integration) RFP to include technology details to be released to the strategic framework contract holders (Cap Gemini, IBM, Wipro and TCS) in the second week of January 2019.

- System Integrator bids were due on February 19, 2019
- IBM and Wipro moved forward in the process, Tata and Cap Gemini did not submit bids
- These bids provided additional information useful as inputs for KEDNY/KEDLI rate case on February 28th
- SI Oral Presentations were completed on March 11th-14th
- An SI of choice is expected to be announced on March 28, 2019

The Proposed SAP Software Solution

This section is intended to document the proposed SAP software and services solution. As with many software and service purchases, a "base" product set along with complementary components and services are selected based on functional requirements. To justify the need for these components and services, this section outlines each along with a description of purpose.

National Grid and SAP are proposing the SAP S/4HANA CR&B Cloud, Single Tenant Edition. This includes a Platform as a Service (PaaS) cloud infrastructure and Application Management Services (AMS), both provided by SAP. This is consistent with what SAP typically includes in a Software as a Service (SaaS) model, but with perpetual software licensing providing inherent use rights.



The following table presents the primary modules and services to be licensed or purchased as a single metric perpetual software license.

Relational Database Management System (RDBMS) - SAP HANA	SAP HANA provides the required physical database, advanced analytical processing environment, and data platform to serve as an Enterprise Data Hub for SAP and Non-SAP data
S/4HANA Enterprise Management	The SAP S/4HANA Enterprise Management solution is the foundational core that covers all mission-critical business processes of an enterprise. This establishes the core S/4 in-memory technology platform on which the Customer Relationship & Billing solution operates.
S/4HANA for energy utilities meter data management and operations	SAP S/4HANA® for energy utilities meter data management and operations supports energy utility–specific meter and device management processes as well as the collection and management of meter reading–relevant data in a central data repository (storage of meter-reading data). It provides functionality for the entire lifecycle of an energy meter as well as for the capture of meter-reading data. Furthermore, it

	supports all processes related to interval data handling, such as the upload, validation, storage, and management of time-series data as well as profile formula calculation and integrates with market-leading advanced metering infrastructure (AMI) systems. As a result, processes can be executed combining the technical features of smart meters and AMI technology with SAP® software. Functionality includes master and metered data integration as well as enhancements in customer service processes. The energy utilities meter data management and operations option also includes the usage right for SAP Utilities Multichannel Foundation for Utilities and Public Sector software, which provides utilities with a powerful and cost-effective way to extend their customer interactions to digital self-service channels like mobile, Web, and social. It contains pre-built customer self-service scenarios that enable customers to securely access key account information and perform important processes online, like entering meter readings and creating an inquiry. The option also enables standardized data exchange processes with participants in liberalized energy markets and the automation of new collaborative processes, including change of supplier, management of grid usage with payment validations, and settlement. Full market compliance with country-specific regulation rules requires the facultative licensing of a respective country add-on (to be provided by the SAP Custom Development organization).
S/4HANA for energy utilities bill-to-cash management	SAP S/4HANA® for energy utilities bill-to-cash management supports the processes around billing for energy and energy-related products, from billing through invoicing and invoice printing, including customer-related financial processes and customer self-services. This includes the processes to bill and invoice the respective products and services to all groups of customers (residential, commercial, and industrial). It supports billing processes for both discrete meter readings and events and meter-reading intervals based on time series (for example, energy settlement, time-of-use billing, real-time pricing). For the financial processes, it supports the typical processes for accounts receivable, credit and collections management, various different types of payments extensions like installment plans, deferrals and promise to pay, support for collection agencies, and more. The energy utilities bill-to-cash management option also includes the usage right for SAP® Utilities Multichannel Foundation for Utilities and Public Sector software, which provides utilities with a powerful and cost-effective way to extend their customer interactions to digital self-service channels like mobile, Web, and social. It contains pre-built customer self-service scenarios that enable customers to securely access key account information and perform important processes online, like electronic bill presentment and payment and creating an inquiry. The option also enables standardized data exchange processes with participants in liberalized energy markets and the automation of new collaborative processes, including change of supplier,

	management of grid usage with payment validations, and settlement.
S/4HANA Utilities for customer management, enterprise edition	SAP S/4HANA® Utilities for customer management (enterprise offering) is an embedded interaction center within SAP S/4HANA that allows back and middle office users to effectively manage customer accounts. Key Capabilities: • Managing business partners and contract accounts • Managing technical master data • Bill information and correction • Managing budget billing plans • Financial inquiries • Collections • Interaction records • Managing meter readings • Fast move in and move out • Transaction launcher to call transactions or middle-office processes Prior to S/4HANA, Call Center and other customer-facing service personnel (Front Office) could utilize CRM (Web-IC) to perform "Customer Service processes" while Back Office users could utilize SAP GUI for the vast majority of their "Transaction" functions. With S/4HANA, SAP placed many of their "Customer Service processes" within S4/HANA itself. So now for some smaller utilities without CRM, S/4HANA can provide integrated Front Office "Customer Service processes" and Back Office "Transaction" functions. Larger utilities may however require a CRM. Those companies use the "Customer Service processes" in their CRM (which could be Salesforce) integrated to S/4HANA. Their Back Office personnel not using CRM can use the integrated functions provided in S/4HANA. SAP recommends the "Customer Service processes" (branded as "Customer Management Enterprise Edition") be included in National Grid's program for 2 main reasons: 1. It provides more of a streamlined user experience for Back Office users who manage customer accounts 2. SAP Customer Management is and will be in the future a key integration component (e.g. used in some Salesforce integration scenarios).
SAP S/4HANA Enterprise Management for Professional use	Provides user access to all S/4HANA solution capabilities
SAP S/4HANA Enterprise Management for Functional use	Provides Business or Functional Use access to S/4HANA solution capabilities
SAP S/4HANA, Developer access	Developer Access S/4HANA
SAP Access Control for SAP S/4HANA	The SAP® Access Control for SAP S/4HANA® application is optimized for SAP S/4HANA. With the application, you can move beyond manual processes for managing access risk. The application enables you to manage segregation of duties (SoD), critical and sensitive access, and super-user access effectively and efficiently. It automates the compliant provisioning of users, periodic user and role certifications, and the maintenance of compliant roles. Key Capabilities: • Access-risk analysis – Accurately identify and remediate SoD and critical access violations in real time • User-access management – Automate access assignments across SAP and third-party software while preventing access violations with embedded risk analysis • Role management – Define and maintain compliant roles in business-friendly terms and

	language • Periodic certification of authorizations – Conduct periodic user-access reviews on a regular basis and help ensure that SoD mitigations are effective • Emergency access management – Confidently authorize users to perform super-user activities outside their roles using “firefighter” login IDs in a controlled, auditable environment
SAP S/4HANA Digital Access	SAP® Digital Access software allows indirect, digital access to SAP S/4HANA®. Indirect, digital access occurs when devices, bots, automated systems, and the like directly access SAP S/4HANA. It also occurs when humans, devices, or systems indirectly use SAP S/4HANA via a non-SAP intermediary software, such as a non-SAP front end, a custom solution, or a third-party application. Use of the digital access is licensed based upon the number of documents created in SAP S/4HANA via a non-SAP intermediary software. Documents represent the most-valued business outcomes from SAP S/4HANA. Primary use case will be for Call Center interaction with SAP.
Hardware components (including setup)	All Server Hardware Included. Services Include: Data Center Management, Network Management, Hardware Operations, Storage Management, Operating System, System Startup/Shutdown, Backup/Restore, Infrastructure integration, File transfer capabilities: CIFS shares, Managed SFTP Server, Management of Wide Area Network.
Provision of data center facility	SAP S/4HANA Cloud, single tenant edition is currently available in 12 data centers covering every geography (as of May 2016). SAP plans to continue expanding the number of SAP data centers in which the solution is available.
Infrastructure operations management: monitoring, patching, software updates and maintenance up to the OS layer	
Operating system (OS) maintenance management: monitoring, patching, updates, and maintenance of the specific OS	SUSE Linux OS; All Server Software Included. Services Include: SAP Client Operations, Interface Administration, Job Scheduling & Monitoring, Transport Management, Output Management, SAP Online Help, SAP Security Management, System performance management, Certificate handling, Disaster Recovery.
SAP HANA database management: space management, revision management, security management, hardware configuration management, backup and recovery, change management coordination	As part of the S/4 Private Cloud offering, all responsibilities related to Database management lie with SAP. SAP Private Cloud is hosting 800+ customers globally and has garnered the required experience to provide the most optimal database tuning and parameterization to maximize database performance for customers.
Health check services, system monitoring, capacity management	
SAP technical application operations (incl. SAP Basis): monitoring, troubleshooting – incident management level 2 and 3, patch management,	SAP Basis refers to the administration of SAP system that includes activities like installation and configuration, load balancing, and performance of SAP applications running on Java stack and SAP ABAP. This includes the maintenance of different services related to database, operating system,

housekeeping, backup and recovery	application and web servers in SAP system landscape and stopping and starting the system.
SAP Solution Manager	SAP Solution Manager is a centralized, robust solution management toolset that facilitates technical support for distributed systems with functionality that covers all key aspects of solution deployment, operation, change management and continuous improvement. It combines tools, content, and direct access to SAP to increase the reliability of solutions and lower total cost of ownership.
SAP Analytics Cloud	SAP® Analytics Cloud solution for business intelligence includes core business intelligence (BI) capabilities such as data access, data exploration, visualization, and storyboard authoring as well as predictive features. SAP Analytics Cloud is licensed on a Concurrent Session model. Proposed pricing assumes 500 Concurrent Sessions for Release 1 (Years 1 and 2) and 1,000 Concurrent Sessions for the remainder of the program.
SAP Cloud Platform, Enterprise Agreement	SAP Cloud Platform is an open platform-as-a-service (PaaS) that delivers in-memory capabilities, core platform services, and unique microservices for building and extending intelligent, mobile-enabled cloud applications. The platform is designed to accelerate digital transformation by helping you quickly, easily, and economically develop the exact application you need – without investing in on-premise infrastructure. Based on open standards, SAP Cloud Platform offers complete flexibility and control over your choice of clouds, frameworks, and applications SAP Cloud Platform Enterprise Edition is licensed based on consumption. Pricing assumes standard Enterprise Agreement and will primarily be utilized for API management, Cloud Integration and limited Intelligent Services.
SAP PI/PO Infrastructure	National Grid already owns this infrastructure with its existing SAP license and it will be scaled to meet increased needs of the CR&B solution
Mulesoft Oracle Fusion	Mulesoft and Oracle Fusion form the middleware between CR&B, Salesforce, and all other application integrations. National Grid already owns licenses to these components and will scale them to handle additional traffic created by introducing CR&B.
SAP Max Attention	End to end service coverage purchased in levels of service hours to provide expert assistance across all aspects of the SAP solution. Max Attention is purchased to supplement skills at National Grid needed to successfully deliver the solution.
SAP Implementation Services	Pre-defined service package providing professional services associated with planning of the implementation and/or accelerating the technical or functional implementation of CR&B. SAP Implementation Services are purchased to ensure the solution being deployed optimally uses the capabilities of the SAP solution while likewise ensuring modifications aren't made to the solution which would affect future upgrades and support. These services provide National Grid with a dedicated SAP "Design Authority".

SAP Model Company	SAP Model Company is a pre-configured CR&B solution which provides accelerators, business content, reference architecture, engineered services, best practices, and the digital business framework as starting points for the CIS project. Model Company is purchased to provide a sample framework of a typical utility that will be used to more efficiently initiate and move forward with the project.

Date of Request: November 5, 2020 Request No. DPS-1067
Due Date: November 16, 2020 NMPC Req. No. NM-1605

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: DPS Staff, Chelsea Kruger

TO: National Grid, Revenue Requirements Panel

SUBJECT: Low Income Program Deferral Balances

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

On page 12 of the Company's "Petition of Niagara Mohawk Power Corporation d/b/a National Grid for Approval to Implement a COVID-19 Customer Assistance Program" in Case 20-M-0479, the Company states:

> The existing low income deferral accounts for the discontinued electric and gas low income customer assistance program ('LICAP') and the former AffordAbility Programs have a combined balance (credit) from the prior rate plan of approximately $15 million as of August 31, 2020. The Company proposes to utilize these existing deferral account balances, along with a balance (credit) of approximately $10 million from the EAP deferral account balance as of August 31, 2020, to fund up to $25 million in new assistance programs for EAP customers.

1. Indicate where the "electric and gas low income customer assistance program ('LICAP')" deferral balance is located within the Company's Revenue Requirements Panel direct testimony and/or exhibits.

2. If the credits identified in Question 1 are not included in the Revenue Requirements Panel direct testimony and/or exhibits, explain why not.

3. Provide the dollar amounts in the following deferral accounts as of December 31, 2019, and August 31, 2020, separately, broken down by electric and gas:

   a. The discontinued electric and gas low income customer assistance program ('LICAP');

b. The discontinued AffordAbility Programs; and

c. The current Energy Affordability Program.

Response:

1. The electric LICAP deferral balance is presented in the Revenue Requirements Panel's direct testimony in Table 10 – Electric Other Accounts and is included under the "Low Income Discount Program – Electric" account. The gas LICAP deferral balance is presented in Table 11 – Gas Other Accounts and is included under the "Low Income Discount Program – Gas" account. Both the electric and gas LICAP deferrals are also presented in Exhibit__ (RRP-7CU), Schedule 2 and are identified by Activities U2540585 and U2540274 for electric and gas, respectively. Note that the electric LICAP program deferral balance is presented in combination with the electric LIEAP program deferral balance in both Table 10 and Exhibit __ (RRP-7CU), Schedule 2.

2. Not applicable.

3. (a, b, & c) See Attachment 1 for the requested balances. Note there is only one AffordAbility Program deferral.

Name of Respondent: Date of Reply:
John O'Shaughnessy November 13, 2020

Niagara Mohawk Power Corporation
d/b/a National Grid
Cases 20-E-0380 and 20-G-0381
DPS-1067 Attachment 1
Page 1 of 1

	G/L Acct	DEC-19	AUG-20
Elec LIEAP Deferral - Current	U2540585	(13,165,954.15)	(26,333,303.98)
Elec LICAP Deferral - Discontinued	U2540585	(8,564,499.43)	(8,535,995.09)
Electric Low Income - Total		**(21,730,453.58)**	**(34,869,299.07)**
Elec AffordAbility - Discontinued	U2540240	(3,179,198.84)	(3,179,198.84)
Electric AffordAbility Total		**(3,179,198.84)**	**(3,179,198.84)**
Gas LIEAP Deferral - Current	U2540792	(997,574.58)	(3,468,219.30)
Gas LICAP Deferral - Discontinued	U2540274	(2,670,737.12)	(2,664,162.65)
Gas Low Income - Total		**(3,668,311.70)**	**(6,132,381.95)**
Gas AffordAbility - Discontinued	U2540706	(661,780.16)	(661,780.16)
Gas AffordAbility Total		**(661,780.16)**	**(661,780.16)**

Date of Request: September 4, 2020 Request No. UIU-041
Due Date: September 14, 2020 NMPC Req. No. NM-571

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID
Case Nos. 20-E-0380 and 20-G-0381
Electric and Gas Rates

Request for Information

FROM: Utility Intervention Unit, Kathleen O'Hare

TO: National Grid, Shared Services Panel

SUBJECT: Energy Affordability

Request:

Note: Unless noted otherwise, each of the following information requests pertains to both National Grid (or the Company) electric and gas services. Please provide a separate answer to each such information request as it pertains to (a) electric and (b) gas.

41. Referring to page 67-68 of the Panel's Direct Testimony, has the Company done any analysis (regarding increased enrollment for each tier, potential fiscal impact, etc.) on the impact of its proposal to expand the existing manual EAP enrollment process to include those additional programs that are provided for KEDNY and KEDLI customers including Temporary Assistance for Needy Families, Supplemental Security Income, Medicaid, Food Stamps, Life Line (income eligible phone service), etc.?

Response:

The Company has not performed any analysis on the impact in enrollment or budget for its proposal to expand the existing manual EAP enrollment process to include the additional programs to align with its existing programs for KEDNY and KEDLI.

Name of Respondent: Date of Reply:
Lisa Visconti September 11, 2020