Enclosure 1

Case 18-F-0325

Application of Danskammer Energy, LLC

Response to DOH-1, dated May 14, 2020

Case: 18-F-0325
Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a 536 MW Natural Gas Combined Cycle Energy Project.

INTERROGATORY/DOCUMENT REQUEST

Request No.: DOH-1	**Date of Request:** May 5, 2020
Requested By: DOH Staff	**Reply Date**: May 14, 2020
Subject: Environmental Justice Analysis	**Responder:** Darin Ometz

Request:

(1) Exhibit 28: Environmental Justice:

There are many sources of ZIP code boundary files, such as the Census ZCTA file as well as many commercially available files. Please provide the source of the ZIP code file that was used in generating the proposed scope of Environmental Justice review, as well as which ZIP codes fall within:

- The Impact Study Area;
- The area, composed of ZIP codes, with population density similar to that of the ISA and located in the same local area; and
- The area composed of the ZIP codes within a radius of 5 to 10 miles from the proposed Project (RC).
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Response:

- The source of the ZIP code file was: US Census Bureau, Zip Code Tabulation Areas, 2017.
- The zip codes that fall within the ISA are: 12508, 12512, 12524, 12527, 12542, 12547, 12550, 12589, 12590 ,12601, and 12603. The following list of six zip codes located in the local area with similar population densities to that of the ISA are as follows: 10535 (Jefferson Valley), 10541 (Putnam Valley), 10567 (Peekskill), 10588 (Mohegan Lake), 10928 (Highland Falls), and 10992 (Fort Montgomery).
- The Reference Community (RC) consists of the following zip codes: 12515, 12520, 12533, 12548, 12553, and 12604.

For your convenience, the Applicant is also attaching the shape-files that were used to prepare Exhibit 28. Please note that the full dataset from the US Census Bureau is also available at: https://www.census.gov/cgi-bin/geo/shapefiles/index.php?year=2017&layergroup=ZIP+Code+Tabulation+Areas.

Enclosure 2

Case 18-F-0325

Application of Danskammer Energy, LLC

Response to DOH-2, dated July 17, 2020

Case: 18-F-0325
Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County.

INTERROGATORY/DOCUMENT REQUEST

Request No.: DOH-2 to Danskammer - Update	**Date of Request:** June 30, 2020
Requested By: DOH Staff	**Reply Date**: July 17, 2020
Subject: Environmental Justice Analysis	**Responder: TRC Environmental Corporation**

Request:

(1) Exhibit 28: Environmental Justice

In their response to DOH-1, the applicant provided the source of the ZIP code files used for the health outcome analysis conducted as part of the Environmental Justice (EJ) analysis in Exhibit 28.

The applicant indicated that the source of the ZIP code file was the US Census Bureau, ZIP Code Tabulation Areas, 2017. The applicant also provided a list of the ZIP codes that fall within the Impact Study Area (ISA) (*i.e.*, 12508, 12512, 12524, 12527, 12542, 12547, 12550, 12589, 12590, 12601, and 12603), the Reference Community (RC) (*i.e.*, 12515, 12520, 12533, 12548, 12553, and 12604) and the RC with similar population densities to that of the ISA (*i.e.*, 10535, 10541, 10567, 10588, 10928, and 10992).

The New York State Department of Health (DOH) requests additional information about the selection of ZIP codes for the EJ analysis and health outcome data review. The selection of ZIP codes does not appear to follow the DOH guidance for this impact study area and comparison areas (*see* New York State Department of Health (Updated) "Guidance for Health Data Review and Analysis Relating to NYSDEC Environmental Justice Requirements for CP-29 and 6 NYCRR 487," Sections I.D.a and I.D.b, dated June 2017).

Please present the methodological reasoning used to select the ZIP codes for each study area identified in the December 2019 Application, along with an explanation of how the ZIP code selections comport with DOH guidance. Should application of DOH-approved methodology result in a different set of ZIP codes selected for the health outcome data analysis, the applicant will be asked to submit a revised analysis for the record.

Response:

In accordance with the requirements under 16 NYCRR Part 1001.28, and the Stipulations executed in Case 18-F-0325[1], the Applicant based the selection of ZIP codes for the impact study area (ISA) and reference communities (RC) on a combination of the following: New York State Department of Health (Updated) "Guidance for Health Data Review and Analysis Relating to NYSDEC Environmental Justice Requirements for CP-29 and 6 NYCRR 487 (June 2017 (the "NYSDOH EJ Guidance"), and 6 NYCRR Part 487. Per the NYSDOH EJ Guidance, ZIP codes within the zero to 10-mile study radius were determined by geographical distance from the Project Facility with the exclusion of ZIP codes with populations less than 50% of the total ZIP code population for those ZIP codes that extended beyond the 10-mile study radius.

In accordance with 6 NYCRR Part 487, all populations that were located within a five-mile radius of the facility were included as part of the ISA, regardless of the percentage population of the ZIP code that resides within the five-mile radius. Per 6 NYCRR Part 487, the ISA is determined by a geographical radius from the Project Facility without taking into consideration the population data for each Census Block Group or ZIP code that falls within the study radius. This methodology results in all ZIP codes within five miles of the proposed Project included in the ISA to avoid the potential for excluding ZIP codes within the ISA that are adjacent to the Project site due to the population centers of those ZIP codes falling outside of the five-mile radius.

Based on the NYSDOH EJ Guidance, without taking into consideration the definition of ISA within 6 NYCRR Part 487, the ISA would only include ZIP codes with greater than 50% of the population within the five-mile radius, noting that the percentage threshold may be lowered for projects located within rural areas. Per the NYSDOH EJ Guidance, the proportion of the population that lies within the study area should be estimated by summing the population of the 2010 census blocks whose geographic centers (centroids) fall within the study area. The detailed step by step methodology below provides the methodological reasoning used to select the ZIP codes in accordance with the NYSDOH EJ Guidance that are provided in Table 1 below:

1. Utilizing GIS software, geographical buffer areas of zero to five miles and five to 10 miles were created around the Project site.
2. ZIP Code Tabulation Area (ZCTA) and Block GIS data were downloaded from US Census Bureau.
3. Population data was acquired for Blocks and ZCTAs from the US Census Bureau, Table P1, SF1 2010 Decennial Census, and joined to ZCTA and Block GIS data.
4. ZIP Code number and total ZIP code population were joined to Block data in GIS.
5. Some ZCTAs were completely within the buffer area and others were only partially within the buffer area. In the GIS software, Blocks whose geographic centers were within the study area were selected and summarized by ZCTA summing the population of the selected blocks by each ZIP Code.
6. Summed populations of the selected Blocks were calculated against the ZCTA total population.
7. ZCTAs with more than 25% of the population comprising the population of the Blocks whose centroids were within the buffer area were chosen as the ISA. ZCTAs with more

[1] Case 18-F-0325, Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County, *Proposed Stipulations,* filed on September 5, 2019.

than 50% of the population comprising the population of the Blocks whose centroids were within the 10-mile buffer area were chosen as the RC with the exclusion of those ZTCAs that were within the ISA. Note that the NYSDOH EJ Guidance thresholds of 50% for urban areas was reduced to 25% for this analysis of the ISA based on the rural setting of the ISA and the instruction to include all ZCTAs that are adjacent to the Project site.

Table 1: Selection of ISA and RC ZIP Codes

ZIP Code	0-5 Mile Population (%)	Population within 10 Miles (%)	Exhibit 28[2]	NYSDOH EJ Guidance[3]
10516	0.00	45.89	Excluded	Excluded
12508	81.01	100.00	ISA	ISA
12512	100.00	100.00	ISA	ISA
12515	0.00	93.03	RC	RC
12518	0.00	44.45	Excluded	Excluded
12520	0.00	94.40	RC	RC
12524	71.24	100.00	ISA	ISA
12525	0.00	15.28	Excluded	Excluded
12527	100.00	100.00	ISA	ISA
12528	0.00	48.88	Excluded	Excluded
12533	0.00	62.14	RC	RC
12540	0.00	0.54	Excluded	Excluded
12542	99.95	100.00	ISA	ISA
12543	0.00	0.00	Excluded	Excluded
12547	23.31	100.00	ISA[3]	RC
12548	0.00	83.33	RC	RC
12550	27.54	100.00	ISA	ISA
12553	0.00	79.87	RC	RC
12561	0.00	2.06	Excluded	Excluded
12575	0.00	9.88	Excluded	Excluded
12586	0.00	23.36	Excluded	Excluded
12589	3.22	50.68	ISA[4]	RC
12590	65.02	100.00	ISA	ISA
12601	3.97	74.80	ISA[3]	RC
12603	2.05	77.65	ISA[3]	RC
12604	0.00	100.00	RC	RC

In addition to the selection of ZIP codes for the ISA and RC, the NYSDOH EJ Guidance instructs using a comparison area consisting of ZIP codes, with population density similar to that of the ISA and located in the same general geographic area (e.g., county or contiguous counties).

[2] Represents the analysis of ZIP codes included in Exhibit 28, based on a combination of NYSDOH EJ Guidance and 6 NYCRR Part 487 definition of the ISA.

[3] Represents the analysis of ZIP codes included within the ISA and RC based on only following the NYSDOH EJ Guidance.

[4]Included within the ISA based on the ZIP Code location within 5 miles of the Project site per 6 NYCRR Part 487 definition of the "impact study area."

The population density of the ZIP codes identified within the ISA in Table 1 was calculated using the population and acreages obtained from the US Census for each ZCTA.

Based on this analysis, the population density of the study area for the analysis provided in Exhibit 28 is 999 persons per square mile and for the analysis strictly following NYSDOH EJ Guidance, the population density is 1,121 persons per square mile. As such, per the NYSDOH EJ Guidance, the comparison area with similar population densities to that of the ISA consists of the following ZIP codes:

- 10535 (Population Density 1,086);
- 10541 (Population Density 993);
- 10567 (Population Density 882);
- 10588 (Population Density 1,128);
- 10928 (Population Density 758); and
- 10992 (Population Density 865).

As indicated in Table 1, there are four ZIP codes (12547, 12589, 12601, and 12603) that were included within the ISA for the health outcome data analysis provided in Exhibit 28 that are considered as ZIP codes within the RC when only applying the NYSDOH EJ Guidance to the selection process. As set forth above, the health outcome data analysis provided in Exhibit 28 comports with both: (i) 6 NYCRR Part 487 for the selection of ZIP codes within the ISA and (ii) the NYSDOH EJ Guidance for the selection of ZIP codes within the RC and other comparison areas. Based on the results of the above assessment as well as the technical conference discussions held with the NYSDOH representatives on July 8, 2020, Danskammer agreed to provide a supplemental health outcome data analysis. The supplemental health outcome data analysis will include the selection of ZIP codes shown in Table 1 that comports with the NYSDOH EJ Guidance.

The Applicant is working diligently on preparing this supplemental health outcome data analysis and expects to provide such analysis on or about July 31, 2020.

Enclosure 3

Case 18-F-0325

Application of Danskammer Energy, LLC

Supplemental Response to DOH-2, dated July 31, 2020

Case: 18-F-0325
Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County.

INTERROGATORY/DOCUMENT REQUEST

Request No.: DOH-2 to Danskammer- Update	**Date of Request:** June 30, 2020
Requested By: DOH Staff	**Supplemental Response Date**: July 31, 2020
Subject: Environmental Justice Analysis	**Responder:** Darin Ometz -TRC Environmental Corporation

Request:

(1) Exhibit 28: Environmental Justice

In their response to DOH-1, the applicant provided the source of the ZIP code files used for the health outcome analysis conducted as part of the Environmental Justice (EJ) analysis in Exhibit 28.

The applicant indicated that the source of the ZIP code file was the US Census Bureau, ZIP Code Tabulation Areas, 2017. The applicant also provided a list of the ZIP codes that fall within the Impact Study Area (ISA) (*i.e.*, 12508, 12512, 12524, 12527, 12542, 12547, 12550, 12589, 12590, 12601, and 12603), the Reference Community (RC) (*i.e.*, 12515, 12520, 12533, 12548, 12553, and 12604) and the RC with similar population densities to that of the ISA (*i.e.*, 10535, 10541, 10567, 10588, 10928, and 10992).

The New York State Department of Health (DOH) requests additional information about the selection of ZIP codes for the EJ analysis and health outcome data review. The selection of ZIP codes does not appear to follow the DOH guidance for this impact study area and comparison areas (*see* New York State Department of Health (Updated) "Guidance for Health Data Review and Analysis Relating to NYSDEC Environmental Justice Requirements for CP-29 and 6 NYCRR 487," Sections I.D.a and I.D.b, dated June 2017).

Please present the methodological reasoning used to select the ZIP codes for each study area identified in the December 2019 Application, along with an explanation of how the ZIP code selections comport with DOH guidance. Should application of DOH-approved methodology result in a different set of ZIP codes selected for the health outcome data analysis, the applicant will be asked to submit a revised analysis for the record.

Supplemental Response:

Danskammer provided an initial response to DOH-2 on July 17, 2020 (the "Initial Response"). As discussed in the Initial Response, Danskammer agreed to provide a supplemental health outcome data analysis based on ZIP codes shown in Table 1 of the Initial Response comporting with the New York State Department of Health (NYSDOH) EJ Guidance (as defined below).

28(b) Supplemental NYSDOH Health Outcome Data Analysis

(1) Evaluation of NYSDOH Health Outcome Data

Based on the NYSDOH's *Guidance for Health Outcome Data (HOD) Review and Analysis Relating to NYSDEC Environmental Justice and Permitting* (the "NYSDOH EJ Guidance"), and without taking into consideration the definition of ISA within 6 NYCRR Part 487, the Project's ISA would only include ZIP codes with greater than 50% of the population within the five-mile radius, noting that the percentage threshold may be lowered for projects located within rural areas. Per the NYSDOH EJ Guidance, the proportion of the population that lies within the study area should be estimated by summing the population of the 2010 census blocks whose geographic centers (centroids) fall within the study area.

Utilizing GIS software, geographical buffer areas of zero to five miles and five to 10 miles, respectively, were created around the Project site and zip code tabulations areas (ZTCAs) were identified in each geographical area. ZCTAs with more than 25% of the population comprising the population of the census blocks whose centroids were within the five-mile buffer area were chosen as the ISA. ZCTAs with more than 50% of the population comprising the population of the census blocks whose centroids were within the 10-mile buffer area were chosen as the RC with the exclusion of those ZTCAs that were within the ISA. Note that the NYSDOH EJ Guidance thresholds of 50% for urban areas was reduced to 25% for this analysis of the ISA based on the rural setting of the ISA and the instruction to include all ZCTAs that are adjacent to the Project site. The list of ZIP codes categorized within the ISA and RC are provided in Table 28-7(a).

Table 28-7(a): Selection of ISA and RC ZIP Codes

ZIP Code	0-5 Mile Population (%)	Population within 10 Miles (%)	NYSDOH EJ Guidance Categorization
10516	0.00	45.89	Excluded
12508	81.01	100.00	ISA
12512	100.00	100.00	ISA
12515	0.00	93.03	RC
12518	0.00	44.45	Excluded
12520	0.00	94.40	RC
12524	71.24	100.00	ISA
12525	0.00	15.28	Excluded
12527	100.00	100.00	ISA
12528	0.00	48.88	Excluded

12533	0.00	62.14	RC
12540	0.00	0.54	Excluded
12542	99.95	100.00	ISA
12543	0.00	0.00	Excluded
12547	23.31	100.00	RC
12548	0.00	83.33	RC
12550	27.54	100.00	ISA
12553	0.00	79.87	RC
12561	0.00	2.06	Excluded
12575	0.00	9.88	Excluded
12586	0.00	23.36	Excluded
12589	3.22	50.68	RC
12590	65.02	100.00	ISA
12601	3.97	74.80	RC
12603	2.05	77.65	RC
12604	0.00	100.00	RC

In addition to the selection of ZIP codes for the ISA and RC, the NYSDOH EJ Guidance instructs using a comparison area consisting of ZIP codes, with population density similar to that of the ISA and located in the same general geographic area (e.g., county or contiguous counties). The population density of the ZIP codes identified within the ISA in Table 28-7(a) was calculated using the population and acreages obtained from the US Census for each ZCTA.

Based on this analysis, the population density of the study area for the analysis is 1,121 persons per square mile. As such, per the NYSDOH EJ Guidance, the comparison area with similar population densities to that of the ISA consists of the following ZIP codes:

- 10535 (Population Density 1,086);
- 10541 (Population Density 993);
- 10567 (Population Density 882);
- 10588 (Population Density 1,128);
- 10928 (Population Density 758); and
- 10992 (Population Density 865).

A compilation of health-related data outcomes was prepared for each of the ZIP codes located within the ISA, and the four CAs: the RC, Orange County and New York State (excluding New York City) and ZIP codes having comparable population densities as the ISA. The data was based upon the NYSDOH's Statewide Planning and Research Cooperative System (SPARCS) database and the NYS Cancer Registry. Data was compiled for asthma emergency department (ED) visits, low birth weight births, and for incidence rates of breast, colorectal, lung/bronchus, and prostate cancers. Table 28-7(b) provides a summary of the cancer incidence rates for the ISA and the CAs. Because of the way the cancer data is assessed by NYSDOH, the cancer data for the ISA cannot be compared directly to the cancer data for the comparison areas; instead, since the expected number of cases is based on the cancer rate for New York State, the state is the comparison area

for the ISA and for the three CAs. Tables 28-8 and 28-9 provide the asthma ED visit rates and low birth weight rates for the ISA and the CAs.

Table 28-7(b). Cancer Incidence Data for ISA, RC, and Orange County

Cancer site	Area	Number of Cases Observed	Number of Cases Expected[1]	Standard Incidence Ratio	95% Confidence Interval Lower	95% Confidence Interval Upper
Breast (female)	ISA	516	443	1.16	1.07	1.27
	RC (5 to 10 Mile Radius)	593	555	1.07	0.98	1.16
	ZIP Codes in nearby area with similar population density as ISA	256	230	1.11	0.98	1.26
	Orange County	1,343	1,305	1.03	0.97	1.09
Colorectal (male)	ISA	177	156	1.13	0.97	1.31
	RC (5 to 10 Mile Radius)	195	196	1.00	0.86	1.15
	Zip Codes in nearby area with similar population density as ISA	77	79	0.98	0.77	1.22
	Orange County	436	449	0.97	0.88	1.07
Colorectal (female)	ISA	158	149	1.06	0.90	1.24
	RC (5 to 10 Mile Radius)	187	186	1.00	0.87	1.16
	ZIP Codes in nearby area with similar population density as ISA	84	71	1.18	0.94	1.46
	Orange County	428	425	1.01	0.91	1.11
Lung and Bronchus (male)	ISA	223	218	1.02	0.89	1.16
	RC (5 to 10 Mile Radius)	307	274	1.12	1.00	1.25
	ZIP Codes in nearby area with similar population density as ISA	111	110	1.01	0.83	1.22
	Orange County	686	620	1.11	1.03	1.19
	ISA	217	195	1.11	0.97	1.27

Table 28-7(b). Cancer Incidence Data for ISA, RC, and Orange County

Cancer site	Area	Number of Cases Observed	Number of Cases Expected[1]	Standard Incidence Ratio	95% Confidence Interval Lower	95% Confidence Interval Upper
Lung and Bronchus (female)	RC (5 to 10 Mile Radius)	255	244	1.04	0.92	1.18
	ZIP Codes in nearby area with similar population density as ISA	124	95	1.31	1.09	1.56
	Orange County	670	552	1.21	1.12	1.31
Prostate (male)	ISA	481	505	0.95	0.87	1.04
	RC (5 to 10 Mile Radius)	521	634	0.82	0.75	0.90
	ZIP Codes in nearby area with similar population density as ISA	277	266	1.04	0.92	1.17
	Orange County	1,418	1,460	0.97	0.92	1.02

Source: *New York State Cancer Registry, Cancer Incidence by Zip Code, 2005-2009* (NYSDOH, 2010).
[1]The cancer rate for the entire state of New York and the number of people in a ZIP code are used to estimate the number of people in each ZIP code that would be expected to develop cancer within the five-year period 2005-2009 if the ZIP code had the same rate of cancer as the state.

Table 28-8. Asthma ED Visits Data for ISA, RC, Orange County and NYS excluding New York City

Age group (years)	Impact Study Area			Comparison Area						95% Confidence Interval	
	Total ED Visits (2012 to 2014)	Population	Rate[1]	Area	Age Group	Total ED Visits (2012 to 2014)	Population	Rate[1]	Rate ratio[2]	lower	upper
0 to 17	920	30,918	99.2	5 to 10-Mile Radius (RC)	0 to 17	906	35,564	84.9	1.17	1.09	1.25
18 to 64	2,495	83,261	99.9		18 to 64	2,286	104,548	72.9	1.37	1.32	1.43
65+	140	13,712	34.0		65+	165	20,203	27.2	1.25	1.05	1.48
TOTAL (all ages)	3,563	131,417	90.4		TOTAL (all ages)	3,385	162,951	69.2	1.31	1.26	1.35
				ZIP Codes in nearby area with similar population density as ISA	0 to 17	232	15,043	51.4	1.93	1.81	2.06
					18 to 64	411	40,642	33.7	2.96	2.85	3.08
					65+	56	8,099	23.0	1.48	1.24	1.74
					TOTAL (all ages)	709	64,878	36.4	2.48	2.40	2.56
				Orange County	0 to 17	2,078	98,237	70.5	1.41	1.32	1.50
					18 to 64	5,040	231,470	72.6	1.38	1.32	1.43
					65+	379	45,694	27.6	1.23	1.04	1.45
					TOTAL (all ages)	7,497	375,401	66.6	1.36	1.31	1.40
				New York State (excluding New York City)	0 to 17	56,766	2,454,641	77.1	1.29	1.20	1.37
					18 to 64	99,945	7,033,434	47.4	2.11	2.03	2.19
					65+	10,070	1,756,592	19.1	1.78	1.50	2.10
					TOTAL (all ages)	166,781	11,244,667	49.4	1.83	1.77	1.89

Source: *SPARCS Data for Asthma ED Visits, Three Years 2012-2014* (NYSDOH, 2016).

[1] Average annual rate of ED visits per 10,000 population.

[2] Rate in impact study area is numerator; rate in CA is denominator.

Rate ratio for all ages is an age-adjusted standardized rate ratio, using 3 age groups (0-17, 18-64, 65+ years).

Table 28-9. Low Birth Weight Data for ISA, RC, Orange County and NYS excluding New York City

Impact Study Area Data			Comparison Area	Comparison Area Data					
Low Birth Weight	Total Births (2014 to 2016)	Rate[1]		Low Birth Weight	Total Births (2014-2016)	Rate[1]	Rate ratio[†]	95%	CI
								lower	upper
351	4,393	7,990	5 to 10-Mile Radius (RC)	379	4,701	8,062	0.99	0.89	1.10
			ZIP Codes in nearby area with similar population density as impact study area	119	1,556	7,648	1.04	0.94	1.16
			Orange County	985	14,274	6,901	1.16	1.04	1.29
			New York State (excluding New York City)	27,221	358,176	7,600	1.05	0.94	1.17

Source: *2014-2016 New York State Vital Statistics Data* (NYSDOH,2018).

[1] Average annual rate of low birth weights per 100,000 births.

[†] Rate in Impact Study Area is numerator; rate in CA is denominator.

As discussed in the NYSDOH EJ Guidance Section I(h) regarding comparisons between ISAs and CAs, the more often the observations fall into the same pattern, the greater the likelihood that the observations suggest a real difference in health status between the ISA and CAs. The NYSDOH EJ Guidance states that, if any of the following conditions listed below are met, consideration of additional options for the permitting conditions should be reviewed as part of the permitting process because of the health outcome data displays and comparisons.

1. A disease rate is higher in the community of concern than in any CA population for any health outcome;
2. A disease rate is higher in the community of concern than in multiple CA populations for any health outcome;
3. The confidence intervals are greater than 1;
4. There is a pattern of higher rates of multiple health outcomes in the community of concern; and
5. Health outcomes that result from an acute exposure (e.g., asthma exacerbations) are elevated rather than those that result from a chronic exposure (e.g., cancer).

The greater the number of conditions that are met, the greater the likelihood is that the health status of the community of concern (i.e., ISA) is actually lower than that found in other areas. Similar to the conclusions drawn from the health outcome data analysis provided in Section 28(b) of Exhibit 28 (based on the criteria set forth in both 6 NYCRR Part 487 and the NYSDOH EJ Guidance), the results of this supplemental analysis, as shown Table 28-7(b) (based solely on the criteria set forth in the NYSDOH EJ Guidance), indicate that the community of concern here, the ISA, has comparable cancer incidence ratios to the four CAs for all of the assessed cancer sites. Similarly, the rate ratio between the ISA and four CAs is close to 1.0 for low-birth weight rates as shown in Table 28-9. The asthma rate ratios as shown in Table 28-8 are greater than 1.15 between the ISA and the nearby CAs and the confidence intervals are greater than 1. Thus, based on the NYSDOH criteria above, the rates of asthma in the ISA meet many of the conditions listed above. However, based on the comparable cancer incidence and low-birth weight incidence rates between the ISA and four CAs, this supplemental analysis does not indicate a pattern of higher rates of multiple health outcomes in the ISA.

Similar to the conclusions drawn from the initial health outcome data analysis included in Exhibit 28 of the Application, we can conclude that based on this supplemental analysis, the Project will meet and exceed the recommendations from the NYSDOH in order to mitigate any potential environmental burden to the nearby ISA and more specifically, EJ areas. This is because: the Project proposes to use the cleanest fuels presently available, which include natural gas as the primary fuel, with ULSD as the back-up fuel; the Project will also be one of the most efficient electric-generating facilities in New York, which further reduces the New York Independent System Operator system-wide average emission rate per megawatt-hour generated; the Project will be required under its applicable air permits to incorporate BACT and LAER technology, which will minimize the emissions from the Project to the lowest achievable emission rates for the combustion turbine; and the Project will offset its emissions of NO_x and VOC through emission reduction credits based on the shutdown of the existing Danskammer Generating Station. The above-mentioned environmental impact mitigation measures will ensure that the Project has negligible to no air quality impacts to the ISA and EJ Areas from its operation.

Enclosure 4

Case 18-F-0325

Application of Danskammer Energy, LLC

Response to DOH-3, dated September 25, 2020

Case: 18-F-0325
Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County.

INTERROGATORY/DOCUMENT REQUEST

Request No.: DOH-3 to Danskammer- Update	**Date of Request:** September 16, 2020
Requested By: DOH Staff	**Reply Date**: September 25, 2020
Subject: Environmental Justice Analysis	**Responder:** Darin Ometz -TRC Environmental Corporation

Request:
(1) Exhibit 28: Environmental Justice

The New York State Department of Health (DOH) submits this Interrogatory Request as a follow-up to a September 3, 2020 technical discussions between DOH staff and the Applicant's consultant TRC Environmental Corporations. These discussions were limited to the health outcome data (HOD) review conducted for the Environmental Justice (EJ) analysis in Exhibit 28 of Danskammer's December 2019 Article 10 application.

For background, in Interrogatory Request DOH-1, transmitted to the applicant on May 5, 2020, DOH requested information on the source of the ZIP code files that was used to generate the proposed scope of the EJ review and identification of the specific ZIP codes for the Impact Study Areas and Comparison Areas. The Applicant provided this information in their May 15, 2020 response to DOH-1. In Interrogatory Request DOH-2, dated June 30, 2020, DOH requested the applicant provide the methodology used for the selection of the ZIP codes for each study area identified in the Application, along with an explanation of how the ZIP code selections comport with DOH guidance. DOH also requested that the applicant submit a revised HOD review analysis should application of DOH-approved methodology result in a different set of ZIP codes selected. After a technical discussion between DOH and TRC Corporation, the Applicant provided an initial response to DOH-2 on July 10, 2020 which indicated that Danskammer would provide a supplemental HOD review based on ZIP codes comporting with DOH guidance in subsequent responses. The Applicant's July 17, 2020 response to DOH-2 described the methods used to select ZIP codes for the HOD review in the December 2019 application and also developed a revised set of ZIP codes, developed per DOH guidance. The Applicant's July 31, 2020 response to DOH-2 contained a revised supplemental HOD review using revised ZIP codes developed for study and comparison areas. The applicant stated in that submittal that the HOD review comported with DOH guidance.

DOH staff reviewed the supplemental HOD review and identified some differences in the calculations of confidence intervals for the expected and observed cancer cases compared to those developed according to our guidance. These differences are minor and do not affect the conclusions of the review. For asthma, using the methods in our 2017 guidance, DOH staff were able to reproduce the Applicant's rate ratios (RRs) for all individual age groups however there

were slight differences in the "all ages" group. Based on our technical discussions with the Applicant's consultant, we determined the consultant's RR for the "all age" group was not age-adjusted. In the case of the low-birth weight health outcome, DOH identified differences between the consultant's low birth weight counts, rates and RRs when compared to calculations using guidance. During our technical discussions with the Applicant's consultant, we determined these differences were associated with different treatment of the presentation of the number of births, with the consultant rounding up for all non-integer values.

DOH's objective in developing this additional IR is to ensure that the Applicant's review and analysis of health outcome data, developed as part of Exhibit 28 of this project's Article 10 application, is consistent with DOH guidance and that the presentation of methods and results are clear, accurate and transparent. Recognizing that our publicly-available guidance offers some flexibility and that there are differences in scientific methods used in epidemiology, we request that the applicant revise their supplemental HOD to highlight where the Applicant's method differ with DOH guidance.

Specifically, for transparency, we request the revised supplement contain a revised Table 28-8: with (1) a footnote indicating that the RR for the "all ages" group was not age-adjusted; and (2) that the Applicant add a new line to Table 28-8 presenting RRs for age-adjusted "all-ages" category using DOH guidance.

For the low-birth weight health outcome, DOH requests that the applicant (1) revise the supplemental HOD review to include an explanation for the rounding used by the Applicant in Table 28-9; and (2) add an additional line to Table 28-9 presenting low birth weight RRs derived using the spreadsheet linked from within DOH guidance. The Applicant is welcome to present in their revised submission, the scientific merits of the differences between the methods used in the July 31, 2020 supplemental HOD and those presented in DOH guidance.

Response:

Danskammer has revised the supplemental **Table 28-8** that was provided in the Applicant's July 31, 2020 response to DOH-2 to include a footnote indicating the rate ratios for the "all ages" category were not age adjusted. The revised supplemental Table 28-8 also includes additional rows for each comparison area that provides the age adjusted rate ratios for the "all ages" category. Note that the additional information is presented in bold text for clarity.

Danskammer has revised the supplemental **Table 28-9** that was provided in the Applicant's July 31, 2020 response to DOH-2 to include a footnote indicating that the low birth weight births were calculated by rounding the raw Perinatal Data Profiles data by zip code in each comparison area. The revised supplemental Table 28-9 also includes additional rows for the impact study area and each comparison that provides the low birth weight births that were calculated for each zip code without rounding. Note that the additional information is presented in bold text for clarity.

As discussed in the NYSDOH Guidance, the percent of low birth weight births during a three-year period by ZIP code is included in Perinatal Data Profiles in the 2014-2016 New York State Vital Statistics Data (Perinatal Data Profiles). Additionally, the data includes the total number of births

in each ZIP code during the three-year period. Per the NYSDOH Guidance, the number of low birth weight births in each ZIP code can be calculated and then summed to calculate the number of low birth weight births and the total number of births in each comparison area.

Based on the presentation of the percentage of births in the Perinatal Data Profiles as a rounded number to the nearest tenth, Danskammer rounded the calculated number of low birth weight births up to the nearest integer for each zip code. This methodology was selected to avoid undercounting the actual number of low birth weight births in each zip code due to the inherent limitations of the Perinatal Data Profile data. Based on the limitations of the Perinatal Data Profile data, partial low birth weight births would be calculated based on the accuracy of the low birth weight birth percentages to the nearest tenth as opposed to an unrounded number or a number with greater accuracy. Note that presentation of low birth weight births in the Perinatal Data Profile at the county and state level provides sufficient accuracy such that rounding the calculated number of low birth weight births is not necessary for these two comparison areas.

Table 28-8. Asthma ED Visits Data for ISA, RC, Orange County and NYS excluding New York City

Age group (years)	Impact Study Area			Comparison Area						95% Confidence Interval	
	Total ED Visits (2012 to 2014)	Population	Rate[1]	Area	Age Group	Total ED Visits (2012 to 2014)	Population	Rate[1]	Rate ratio[2]	lower	upper
0 to 17	920	30,918	99.2	5 to 10-Mile Radius (RC)	0 to 17	906	35,564	84.9	1.17	1.09	1.25
18 to 64	2,495	83,261	99.9		18 to 64	2,286	104,548	72.9	1.37	1.32	1.43
65+	140	13,712	34.0		65+	165	20,203	27.2	1.25	1.05	1.48
TOTAL (all ages)	3,563	131,417	90.4		TOTAL (all ages)[3]	3,385	162,951	69.2	1.31	1.26	1.35
					TOTAL (all ages)[4]	**3,385**	**162,951**	**69.2**	**1.31**	**1.27**	**1.35**
				ZIP Codes in nearby area with similar population density as ISA	0 to 17	232	15.043	51.4	1.93	1.81	2.06
					18 to 64	411	40,642	33.7	2.96	2.85	3.08
					65+	56	8,099	23.0	1.48	1.24	1.74
					TOTAL (all ages)[3]	709	64,878	36.4	2.48	2.40	2.56
					TOTAL (all ages)[4]	**709**	**64,878**	**36.4**	**2.52**	**2.44**	**2.60**
				Orange County	0 to 17	2,078	98,237	70.5	1.41	1.32	1.50
					18 to 64	5,040	231,470	72.6	1.38	1.32	1.43
					65+	379	45.694	27.6	1.23	1.04	1.45
					TOTAL (all ages)[3]	7,497	375,401	66.6	1.36	1.31	1.40
					TOTAL (all ages)[4]	**7,497**	**375,401**	**66.6**	**1.38**	**1.34**	**1.43**
				New York State (excluding New York City)	0 to 17	56,766	2,454,641	77.1	1.29	1.20	1.37
					18 to 64	99,945	7,033,434	47.4	2.11	2.03	2.19
					65+	10,070	1,756,592	19.1	1.78	1.50	2.10
					TOTAL (all ages)[3]	166,781	11,244,667	49.4	1.83	1.77	1.89
					TOTAL (all ages)[4]	**166,781**	**11,244,667**	**49.4**	**1.80**	**1.74**	**1.86**

Source: *SPARCS Data for Asthma ED Visits, Three Years 2012-2014* (NYSDOH, 2016).

[1] Average annual rate of ED visits per 10,000 population.

[2] Rate in impact study area is numerator; rate in CA is denominator.

[3] Rate ratio for all ages is not age adjusted.

[4] Rate ratio for all ages is age adjusted.

Table 28-9. Low Birth Weight Data for ISA, RC, Orange County and NYS excluding New York City

Impact Study Area Data			Comparison Area	Comparison Area Data					
Low Birth Weight	Total Births (2014 to 2016)	Rate[1]		Low Birth Weight	Total Births (2014-2016)	Rate[1]	Rate ratio[†]	95% CI lower	95% CI upper
Low Birth Weight Births (Rounded)[2]									
351	4,393	7,990	5 to 10-Mile Radius (RC)	379	4,701	8,062	0.99	0.89	1.10
			ZIP Codes in nearby area with similar population density as impact study area	119	1,556	7,648	1.04	0.94	1.16
			Orange County	985	14,274	6,901	1.16	1.04	1.29
			New York State (excluding New York City)	27,221	358,176	7,600	1.05	0.94	1.17
Low Birth Weight Births (Unrounded)[3]									
348	**4,393**	**7,913**	**5 to 10-Mile Radius (RC)**	**375**	**4,701**	**7,983**	**0.99**	**0.89**	**1.10**
			ZIP Codes in nearby area with similar population density as impact study area	**117**	**1,556**	**7,529**	**1.05**	**0.94**	**1.17**
			Orange County	**985**	**14,274**	**6,900**	**1.15**	**1.03**	**1.27**
			New York State (excluding New York City)	**27,221**	**358,176**	**7,600**	**1.04**	**0.93**	**1.16**

Source: *2014-2016 New York State Vital Statistics Data* (NYSDOH,2018).

[1] Average annual rate of low birth weights per 100,000 births.

[2] Low birth weight births calculated using low birth weight percentages for each zip code within the study areas were rounded up to the nearest integer.

[3] Low birth weight births calculated using low birth weight percentages for each zip code within the study areas were not rounded.

[†] Rate in Impact Study Area is numerator; rate in CA is denominator.