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January 21, 2003

Jerry Crockford, Project Manager
U.S. Bureau of Land Management
Las Vegas Field Office
4701 Torrey Pines Drive
Las Vegas, NV 89130-2301

Re: City of Henderson Comments on the Draft Environmental Impact Statement for the Ivanpah Energy Center.

Dear Mr. Crockford:

The City of Henderson ("City") has reviewed the Draft Environmental Impact Statement ("Draft EIS") for the Ivanpah Energy Center, a proposed 500 MW gas-fired electric power generating station in southern Clark County, Nevada, and is pleased to provide the attached comments on this document. The City is interested in proposals for development that have the potential to affect shared resources, such as air, in southern Clark County, since additional sources of air pollution in this area may adversely impact the quality of life in Henderson and other nearby communities as well as constrain future opportunities for growth in this area.

The City is concerned that this document may not provide an adequate examination of the proposed project's environmental impacts on this area of Clark County. In general, the Draft EIS does not provide adequate information and detail, or use the proper analytical methods to correctly evaluate the individual and cumulative impacts of the new facility on air quality in the area of the development. The City believes that the Draft EIS should be revised to properly inform the public and other interested parties about the potential impacts of the proposed project, in particular those impacts on air quality.

The City's general and specific comments on the air quality analysis in the Draft EIS are presented in the attachment to this letter.

Sincerely,

Shauna M. Hughes
City Attorney

SMH:kal
Enclosure

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General Comments

M1.1

1. Emission estimation and air dispersion modeling are the two main components of the air quality analysis of the Draft EIS. The Draft EIS, however, does not contain enough information for reviewers to understand the basis of the calculations and the assumptions inherent in the calculations. It appears that there are no air modeling or emissions estimation appendices or any other section in which the details of these calculations are presented. The applicant should provide this supporting information.

M1.2

2. The analysis of air quality impacts for the Primm site in Section 5.2.12 is inadequate. The entire analysis is only four paragraphs long, and contains almost no quantitative information about impacts from this alternative location. The Draft EIS states that "(t)he flatter terrain at the Primm site would result in somewhat lower impacts than determined for the Goodsprings site." No supporting documentation or modeling results have been provided to verify this statement. To provide a true basis for comparison, the Draft EIS should be revised to include the same analyses for the Primm site that were performed for the Goodsprings site.

Emissions Calculations

M1.3

3. The Draft EIS states that short-term, emission rates for turbine start-up periods have been taken from the Technical Support Document (TSD) for the Reliant Energy Arrow Canyon air quality permit (page 5-84). It is not possible to tell whether the use of this data is appropriate for the proposed facility, since the types of equipment used at the Reliant facility, and the methods used to determine startup emissions for that facility, are not provided in the Draft EIS. Supporting documentation for startup emissions should be provided based on either source test data for a facility using similar turbines, or based on data supplied by the manufacturer.

M1.4

4. Page 5-83 of the Draft EIS states that, for the purpose of emissions calculations, a heat rate of 6600 BTU/kWh has been assumed. No supporting information has been provided for this assumption. This information should be provided to demonstrate that worst-case emissions have been used in the air quality analysis for this project.

M1.5

5. In the section on Toxic Chemical Substance (TCS) emissions, on page 5-81, the Draft EIS states that "ammonia will be the only DAQM [Clark County Department of Air Quality Management] regulated toxic chemical substance emitted from the project." This statement ignores the fact that, in addition to the 21 compounds regulated as toxic chemical substances, DAQM also regulates the 189 Hazardous Air Pollutants (HAPs) listed in the federal Clean Air Act (see DAQM Air Quality Regulation 12.2.18). The combustion equipment at the proposed facility would emit many HAPs, including formaldehyde and benzene, among others. The Draft EIS should be revised to include an analysis of the emissions of these HAPs.

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General Response – Many of the comments imply that the level of detail in the air quality analysis is insufficient to draw conclusions. Support for this position is attributed to various air quality regulatory requirements, both local and federal. The Draft EIS was prepared in compliance with NEPA to be used in BLM's decision to grant Right of Way applications under FLPMA and MLA. While the DEIS examines the environmental consequences of the IEC Project with regards to air quality, the agency with jurisdiction on air quality issues is the Clark County Department of Air Quality Management (DAQM). Accordingly, the applicant has submitted an Application for an Authority to Construct Certificate to the DAQM. The DAQM will conduct its own thorough analysis of the potential air quality impacts of the IEC Project and will not issue an Authority to Construct Certificate unless all regulations are fully complied with. In addition, the Certificate will contain appropriate conditions to ensure that all requirements are met. While detailed information typically required to obtain a permit may not be included in the DEIS, sufficient information from the DAQM application is presented to reasonably evaluate project impacts. It is also worth noting that no comments were received from Clark County.

M1.1 Emissions estimates and modeling results discussed in the DEIS were taken from the applicant's Application for an Authority to Construct Certificate. Detailed printouts of the modeling described in the EIS are contained in that document. The project cannot be constructed until a full analysis of the application is made by DAQM and an Authority to Construct Certificate is issued.

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M1.2 The Primm site air quality analysis relies, in part, on the modeling done for the Goodsprings site. This was supplemented by professional judgment as to the differences that might be seen at the Primm site. If the Primm site is selected, it will be necessary for the applicant to submit a revised application to DAQM addressing that site specifically. Furthermore, the project must be found to be in compliance with applicable local and federal air quality regulations, and a permit issued, before construction can begin. The permit itself will be subject to full public review as required by DAQM and federal regulations.

M1.3 The type of equipment used for the Reliant facility is stated on page 5-84 as being 501FD turbines, the identical turbines proposed for the IEC project (p. 5-81). Start-up emissions for this turbine have been evaluated in the Technical Support Document (TSD) prepared by the DAQM for the referenced Reliant project, as stated on page 5-84.

M1.4 As stated on page 5-83, an average heat rate of 5,983 Btu/kWh was calculated for the plant using the Westinghouse Gate-Cycle Model, which was set up for the Westinghouse 501 FD turbine and site specific conditions. Thus, this model was specifically designed to predict the performance of the proposed turbines at the proposed site. Table 5-13 shows a summer heat rate of 6,074 Btu/kWh based on the same analysis. The assumed rate of 6,600 Btu/kWh allowed for an approximately 10 percent error, although the Gate Cycle model is quite accurate. Thus, there is sufficient conservatism built into the calculation to ensure that emissions are not underestimated. The 6,600 Btu/kWh rate and the emissions presented in Table 5-14 and 5-15 were used in the application to DAQM. It is expected that these emissions will be reflected in the DAQM permit as the maximum allowable.

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M1.5 The commenter is correct that HAPs, including formaldehyde and benzene, would be emitted by the facility as a result of burning natural gas. Table 5-15a (included as supplemental information to the FEIS [refer to Section 4]) shows a full inventory of HAPs emissions for the facility, including emission factors and sources of those factors. Fuel use for these calculations is the same as was used for criteria pollutants. The total estimated emissions of all HAPs are 6.38 tons/yr. This is less than the limits given in DAQM Rule 12.2.18 of 10 tons/yr for a single HAP or 25 tons/yr for total HAPs. Thus, the requirements of Rule 12.2.8 would not apply for this project. This information is included in the application submitted by the applicant to the DAQM.

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M1.6

6. There is no information provided in the Draft EIS concerning the source of the ammonia emission rate of 25.8 lb/hr provided on page 5-84. This emission rate should be based on an allowable ammonia slip rate that will be required of this project. The allowable ammonia slip and the corresponding calculation of the ammonia emission rate should be provided.

M1.7

7. The discussion of construction phase impacts on page 5-84 of the Draft EIS is inadequate. This discussion contains no quantitative emission estimates of construction phase emissions, and no analysis (qualitative or quantitative) of the impacts of these emissions on ambient air quality. The secondary emissions from vehicle exhaust during construction are not mentioned at all in this discussion. This discussion contains the statement that "(p)otential receptors are unlikely to be impacted and resultant impacts are likely to be negligible." No supporting documentation of any kind is provided for this statement. The Draft EIS should be revised to include an estimate of the emissions and resulting impacts from construction phase emissions, including vehicle exhaust emissions.

Modeling – General

M1.8

8. The proposed project would be located within ten miles of two nonattainment areas: the Las Vegas Valley (nonattainment for PM10 and CO) and San Bernardino County, California (nonattainment for PM10). As a result, USEPA regulations require a demonstration that the proposed project will not cause or contribute to a violation of the NAAQS in either of these areas. Sources having more than a significant impact in any nonattainment area are considered to cause or contribute to a violation of the NAAQS (see 40 C.F.R. § 51.165(b)(2)). The impacts reported in the Draft EIS are already considered significant for PM_{10}, NOx, and CO, and these may be underestimated since startup emissions do not appear to have been included. The Draft EIS should be amended to include a demonstration that the project will not have significant impact on either of the nearby nonattainment areas.

M1.9

9. USEPA and DAQM regulations require that three operating loads must be modeled for modeling performed to satisfy PSD requirements: (1) maximum load, (2) expected load, and (3) minimum load. These three modes are required to be modeled because the maximum load may not represent the greatest impacts. From the modeling presented in the Draft EIS, it appears that only the maximum load was modeled. The modeling in the Draft EIS should therefore be revised to satisfy USEPA and DAQM requirements.

M1.10

10. Air quality impacts from the proposed facility were determined using the ISCST3 model. In general, this model is appropriate for use in this case. It appears, however, that the inputs used in the modeling were not valid. Our comments on ISCST3 modeling inputs for this project are described below in subsequent comments. We would also like to note that the ISCST3 model is not adequate for all types of modeling required for this project and will need to be supplemented by the use of additional models. For example, visibility

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M1.6 Ammonia emissions are based on a slip rate of 10 ppmvd, a level to which the applicant has committed in its application to the DAQM. The stated emissions rate of 25.8 lb/hr per stack are based on 10 ppmvd and full load operation of the plant.

M1.7 The document states on page 5-84 that "dust control activities would be implemented under Section 94 of the Air Pollution Control Regulations on mitigating impacts of construction emissions." Fugitive dust implications for this type of project are well known, and conditions in the dust control permit required by the DAQM are designed to limit those impacts to acceptable levels. Professional judgement, supported by the requirement for a dust permit and the fact that equipment exhaust emissions would be temporary and dispersed, has been used to make the determination that construction emission impacts will not be significant.

M1.8 The 24-hour and annual PM_{10} isopleth maps in Figures 5-19 and 5-20, respectively, clearly show the limits of project impacts above EPA significance levels (defined as 5.0 $\mu g/m^3$ – 24-hr; and 1.0 $\mu g/m^3$ - annual) during normal operations to be contained within a few miles of the plant site and well within the Ivanpah Valley (i.e., outside of the Las Vegas Valley and San Bernardino County PM_{10} nonattainment areas). Table 5-20 shows that the maximum CO impacts for normal operations do not exceed the applicable significance levels at any location, and thus also do not impact the Las Vegas Valley CO nonattainment area. As reported in the Las Vegas Review Journal on January 17, 2003, the CO standards have not been exceeded in the Las Vegas Valley in four years. The DAQM has requested, and expects to receive, a redesignation of the Las Vegas Valley to a status of attainment for the CO standards. Regarding impacts from start-up emissions, PM_{10} and CO were modeled for the short-term periods that would be applicable to start-up. Those results are shown in Table 5-20 based on

Cold-start emissions in Table 5-19. Although start-up impacts for both pollutants exceeded the significance levels, these levels were not exceeded in the Las Vegas Valley or in San Bernardino County. NO_2 impacts during start-up were not modeled because the NO_2 standard is an annual average standard. The relatively small impact of higher start-up emissions on an annual basis would be offset by the lack of emissions during extended off-line periods that must occur prior to start-up. It should be noted that impacts on nonattainment areas will be evaluated by the DAQM in the application review process.

M1.9 The gas turbines used for this project are expected to run only at full load. The plant would sometimes run at half load by running only one gas turbine. In that case, impacts would be approximately half of those predicted in the DEIS because the turbines will exhaust to separate stacks about 200 ft. apart. The maximum predicted impacts are the result of adding impacts from both stacks, each of which contribute essentially one-half to the total.

M1.10 This general comment serves as an introduction to the specific comments that follow. Responses to those comments are given below.

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impacts on the Grand Canyon, as recommended below, will need to be determined by a model such as CALPUFF.

Modeling – Meteorological Data

M1.11

11. The Draft EIS contains the results of an ambient air quality analysis prepared for the proposed facility using air dispersion modeling. According to the EIS, this modeling is used for compliance with National Environmental Protection Act (NEPA) and Clean Air Act PSD requirements. The ISCST3 model was used for this analysis. This model is appropriate for use in this case, but the input data used in the modeling was not appropriate. The Draft EIS states that the available meteorological data were deemed to be unrepresentative of the area near the proposed facility, so a screening set of meteorological data was developed to simulate worst-case conditions. This is inconsistent with the requirements of Section 9.3.1.2.a of USEPA's Guideline on Air Quality Models (40 C.F.R. Part 51, Appendix W), which states:

> "Five years of representative meteorological data should be used when estimating concentrations with an air quality model. Consecutive years from the most recent, readily available 5-year period are preferred. The meteorological data may be data collected either onsite or at the nearest National Weather Service (NWS) station. If the source is large, e.g., a 500MW power plant, the use of 5 years of NWS meteorological data or at least 1 year of site-specific data is required."

This regulation *specifically* mentions 500 MW power plants as an example of the types of large emissions sources that are required to use at least five years of representative NWS data or one year of on-site data. DAQM Air Quality Regulation 12.5.3.2 also requires that all modeling be performed in accordance with the USEPA Guideline in Appendix W. In addition, Appendix W is the standard federal air quality modeling guidance and should therefore be used for guidance on air quality modeling performed in the context of an EIS (see 40 C.F.R. Part 51 – Appendix W, Section 1.0(a)). The modeling for this project should therefore be re-done using data that satisfies USEPA and DAQM requirements.

M1.12

12. The Draft EIS states on page 5-86 that the combinations of wind speed and stability conditions used in the modeling for this project include all combinations used in USEPA's SCREEN3 model. This is not correct, since the combinations used for this project (listed in Table 5-17) do not contain the following combinations that are listed in the USEPA SCREEN3 manual:

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M1.11 The method of using ISCST3 with screening meteorological data has been routinely accepted by EPA and other air regulatory agencies. It is clearly a more conservative approach than using a one or five-year period of actual meteorological data. As mentioned previously, Clark County did not comment on the modeling approach used.

In any event, a full year set of modeling quality meteorological data in the Ivanpah Valley has recently become available from the Primm Bighorn power plant site. This data set has undergone full quality assurance and quality control (QA/QC) procedures and will be used by DAQM to evaluate the combined effects of the IEC plant with the Bighorn plant, other point sources in the Ivanpah Valley, Interstate 15, and the proposed Ivanpah Valley Airport. The results will be used by DAQM in making permitting decisions regarding the IEC plant.

M1.12 Upon review, the commenter is correct in pointing out that the screening meteorological conditions used in the modeling analysis do not exactly match the SCREEN3 array of conditions. The array of conditions used was taken from PTPLU, another EPA screening model. The range of conditions used is similar to those used in the SCREEN3 model. In all cases, maximum project impacts were due to very stable, low wind speed conditions, specifically stability class F and a wind speed of 1.0 meter/sec. This condition, as well as all other stable, low wind speed conditions were included in the data set that was used. The F/1.0 condition was dominant because of the elevated terrain near the plant. Maximum impacts in elevated terrain favor F/1.0 conditions because those conditions result in the minimum possible plume dispersion prior to interaction of the plume with terrain. There is no indication that higher impacts would result from the additional meteorological conditions listed in the comment.

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Stability Class	Wind Speed (meters/second)
B	3.5, 4.5
C	1.0, 1.5, 3.5, 4.5, 8.0
D	4.5, 8.0
E	3.5, 4.5
F	3.5

As a result, the modeling for this project may not capture all of the worst-case impacts that could result from this project. If it were acceptable to use ISCST3 with screening data in this case, which it is not, all possible combinations of data should be evaluated.

M1.13

13. Although a variety of wind speeds and stability classes were used in the modeling prepared for this project, page 5-86 of the Draft EIS states that "(a)ll simulated conditions were assigned an ambient air temperature of 293 °K (°K = degrees Kelvin) (68 °F), which is approximately the annual average temperature in the project area." The use of a constant temperature for the entire year will not appropriately represent the widely varying temperature profile for this area (both the diurnal and seasonal profiles). For different periods of the year, ambient temperatures in the project area could easily be 30 °F above or 30 °F below 68 °F, the temperature used in the modeling. This is significant since the difference between the ambient air temperature and the temperature of the stack exhaust are part of the buoyant flux calculations, which are used in dispersion modeling to determine how high the plume rises. By misrepresenting plume rise, the use of a constant temperature will therefore not predict worst-case impacts. If it were acceptable to use ISCST3 with screening meteorological data in this case, which it is not, the modeling should be rerun, at a minimum, at the highest possible temperatures, and at the lowest possible temperatures.

Modeling – Class I Areas

M1.14

14. Impacts on Class I areas have not been evaluated at all in the Draft EIS. The report states on pages 5-85 and 5-86 that a determination of these impacts is not required since the closest Class I area (Grand Canyon National Park) is further than 100 kilometers away from the site of the proposed project. PSD projects, however, are regularly required to consider impacts on Class I areas further than this distance. The Phase I guidance developed by the Federal Land Managers Air Quality Related Values Workgroup (FLAG) is the applicable guidance for determining Class I area impacts as part of an EIS (see FLAG Phase I Report, Section C.2.d). The FLAG guidance states that Federal Land Managers may consider Class I areas up to 300 km from a proposed project. There are several Class I areas within this distance, including Grand Canyon National Park, Sequoia National Park and Joshua Tree National Monument. The Draft EIS should be revised to include an analysis of impacts on Class I areas. This analysis should include predictions of ambient air concentrations, visibility impacts, and nitrogen and sulfur deposition. The

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As mentioned in Response 11 above, the project will be remodeled by DAQM with actual meteorological data. DAQM will rely on those results in its permit review. Since the DAQM cannot issue a permit that would jeopardize air quality standards or PSD increments, the project will not be allowed to have a significant impact under the DEIS definition.

M1.13 The use of an annual average temperature is reasonable and generally accepted by EPA and other regulatory agencies for screening analyses. In reviewing stack parameters used in modeling, it was discovered that the actual volume flow rate, an important component of the plume rise equation, had been underestimated by 17 percent. Plume rise was calculated for all SCREEN3 meteorological conditions to compare the results from stack parameters (1) as modeled, and (2) with the correct exit velocity and an ambient temperature of 100°F. The resulting plume heights were within 3 percent for all meteorological conditions, and within 0.3 percent for the F/1.0 condition responsible for worst-case impacts. Thus, use of a higher temperature, with the correct exit velocity, would have minimal effect on results presented in the DEIS. Use of a temperature lower than 68°F would result in a higher plume rise for either exit velocity because plume rise is enhanced by greater differences between ambient and stack gas temperatures.

M1.14 Although the Federal Land Managers may consider projects more than 100 km from a Class I area, they are not required to do so and they have declined to make such a request for this project. The National Park Service in Boulder, Colorado was made aware of the project in August 2001 and was specifically asked whether they had an interest in the project. The NPS declined to make any request for involvement. The NPS is the responsible Federal Land Manager for all three of the Class I areas mentioned in the comment.

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exclusion of the Grand Canyon, in this case, is particularly egregious. The Grand Canyon is approximately 160 kilometers from the project site, and is currently the subject of an intensive regional haze study, which includes an evaluation of impacts from sources in Clark County.

Modeling – NAAQS and PSD Increment Analyses

M1.15

15. Since the proposed facility was predicted to cause a significant impact for at least one PSD pollutant, modeling of the facility plus other sources and representative background concentrations is required to determine compliance with the National Ambient Air Quality Standards (NAAQS) and the PSD increments. According to Section IV.C of USEPA's Draft New Source Review Workshop Manual, the sources modeled in a NAAQS and PSD increment analysis should include all sources located within 50 kilometers of the impact area. To define the impact area, a circle is drawn with a radius equal to the distance between the source and the furthest point of significant impact due to the facility emissions alone. This evaluation is critical to assisting reviewers of the EIS understand to what degree the proposed development impacts the potential for further development of the area near the proposed project, including southwestern Clark County.

The Draft EIS does not contain adequate information to determine whether the list of other sources included in the modeling was determined correctly. As stated on page 5-88 of the Draft EIS, a list of NOx and PM_{10} sources in the Ivanpah Valley was provided by DAQM for use in this modeling. The area defined by the significant impact area plus 50 km, however, would extend beyond the Ivanpah Valley, into other areas of Clark County and into California. The Draft EIS should be revised to specify which sources were included in the NAAQS and PSD increment modeling analyses, and should be re-done if sources outside the Ivanpah Valley and within 50 km of the significant impact area were not included in these analyses.

M1.16

16. Although emissions and resulting impacts from turbine startup and shutdown are presented in the Draft EIS, these impacts do not appear to have been considered in the ambient air quality impacts analyses. For example, Table 5-20 lists PM_{10} impacts from both normal operation and from cold startup. The NAAQS and PSD increment analyses in Table 5-21, however, reflect the impacts from normal operations, even though the reported startup impacts were higher. The PM_{10} modeling analyses in the Draft EIS should be revised to include impacts from startup periods, since these clearly represent worst-case conditions.

M1.17

17. The Draft EIS states on page 5-88 that CO impacts from the facility are considered insignificant, even though Table 5-20 shows CO impacts above the 1-hour and 8-hour significance levels for cold startup conditions. This table states clearly that further modeling is required for CO, but Table 5-21 and the text of the Draft EIS indicate that no NAAQS or PSD increment modeling was performed for CO. The modeling analyses in the Draft EIS should be revised to include a full analysis for CO, similar to what was done for

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M1.15 The modeling analysis in the DEIS was done in consultation with the DAQM, who has the responsibility to ensure that the project is in compliance with all air quality rules and regulations.

M1.16 As a worst case, one could add the difference between PM_{10} impacts during baseload and start-up conditions (1.5 $\mu g/m^3$) to the "All Sources" impacts shown in Table 5-21. This would not change any conclusions of the DEIS. Therefore, additional modeling is unnecessary.

M1.17 A search of the EPA emissions database revealed only two significant sources within 50 km of the CO significant impact area. These included the Mirage Hotel at 43 km and the Clark power facility at 47 km. Annual emissions were reported as 28 tons for the Mirage and 89 tons for the Clark facility. A SCREEN3 calculation was made for the Clark facility using a stack height of 50 feet with no plume rise. The calculated maximum 1-hr impact at 43 km was 1.5 $\mu g/m^3$. Thus, neither of these sources would contribute significantly (i.e. >2000 $\mu g/m^3$) in the IEC significant impact area.

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PM_{10} and NOx. This analysis should include worst-case impacts from operation during startup.

M1.18

18. Table 5-21 of the Draft EIS reports NO_2 impacts that exceed the allowable Class II PSD increment. The text states on page 5-89 that these impacts are almost entirely attributable to emissions from the regional airport proposed for this area. The Draft EIS provides no supporting documentation for this statement. In addition, it is not clear from the document whether all locations where the NO_2 impacts exceed the allowable Class II PSD increments were analyzed, or only the point of maximum impact. Therefore, the Draft EIS should be revised to include modeling input and output files to demonstrate that the proposed project will not cause or contribute to a PSD increment violation.

M1.19

19. As noted above, the impacts from startup and shutdown periods do not appear to have been used in the air quality analysis of short-term impacts, even though these periods result in the highest facility emissions. It is also unclear whether these emissions were included in the determination of annual impacts from the facility. Page 5-84 of the Draft EIS states that ideally there would only be two startup/shutdown cycles per year for routine maintenance, although "market conditions could dictate a higher frequency." It is likely that two startup/shutdown cycles per year is a significant underestimate for a merchant power plant. Many recently permitted power plants of the size of the proposed project include up to 500 hours per year of operation in startup mode (e.g., . This accounts for periods when a plant may expect to shutdown due to fluctuations in electricity costs and demand. The desired annual startup hours should be used in estimating annual emissions, and should also be reflected as a permit condition in the air permit for the proposed facility. The Draft EIS should therefore be revised to include startup emissions in estimating worst-case annual air quality impacts.

Pre-Construction and Post-Construction Monitoring

M1.20

20. From the modeling results presented in the Draft EIS, it appears that the project triggers the USEPA and DAQM requirement for pre-construction monitoring of CO and pre-construction and post-construction monitoring of PM_{10}. DAQM Air Quality Regulation 12.5.5.1 states that the 24-hour modeling thresholds for pre-construction and post-construction PM_{10} monitoring are 10 g/m^3 and 16 g/m^3, respectively. The 24-hour facility PM_{10} impacts reported in the Draft EIS are 16.8 g/m^3 (baseload) and 18.3 g/m^3 (startup). Likewise, the threshold for pre-construction CO monitoring in the DAQM regulations is 575 g/m^3 as an 8-hour average, and the 8-hour facility CO impact for startup conditions reported in the Draft EIS is 869 g/m^3. As a result, the facility should be required to collect up to 12 months of ambient PM_{10} and CO concentrations in the area near the proposed project location before an air permit application is submitted. The Draft EIS does not mention this requirement, so if this data has already been collected, it should be provided as part of the Draft EIS.

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M1.18 The statement on page 5-89 was based on comparing impacts from all sources to those from the airport alone. Airport impacts were calculated in a separate ISCST3 model run in which only airport emissions were included. From a comparison of this run to the PSD increment run, it was determined that airport emissions contributed more than 99 percent of the total PSD increment NO_2 concentration of 31.6 $\mu g/m^3$. It should be further noted that the airport is not a legitimate PSD source at this time because a complete application has not been filed with the DAQM for that facility. However, it was included due to Clark County concerns that emissions from the IEC project could potentially jeopardize future airport approvals.

The grid analyzed was designed to include not all areas that might exceed the PSD increment, but only those areas within the significant impact area for the project. The significant NO_2 impact area for the project can be determined from Figure 5-18. It is the rectangle formed by the maximum extent of impacts above the significance level of 1.0 $\mu g/m^3$ to the north, east, south and west. This definition of the significant impact area follows DAQM guidance (Draft Guideline on Air Dispersion Modeling - January 1996) (final never issued). Figure 5-21 shows the impact of all PSD sources on a concentration isopleth map. This includes the Ivanpah Valley Airport (stationary, mobile, & aircraft), at the request of Clark County, even though the airport is not actually a PSD source since it is in the early planning stages. No application has been deemed complete and no permits have been issued. Figure 5-21 shows the PSD increment exceedance area (above 25 $\mu g/m^3$) to be in the extreme southeast corner of the grid (isopleth intervals are 5 $\mu g/m^3$). Figure 5-18 shows that project impacts in that area are well below

the significance level of 1.0 µg/m^3. In fact, Table 5-21 indicates that the calculated project contribution to the maximum PSD impact is 0.1 µg/m^3, one-tenth of the significance level. By EPA and County standards, this means that the project is not a significant contributor to this calculated PSD increment exceedance. It is clear from Figure 5-21 that the PSD increment exceedance area would extend beyond the project significant impact area to the southeast (towards the airport sources). However, given the extremely small impact of the project in that area, it is beyond the scope of the EIS to review impacts of the airport to the east of the area modeled. These isopleth maps are sufficient to show that the project will not cause or contribute to a PSD increment violation, even if the proposed airport is considered to be a PSD source.

M1.19 Start-up conditions for affected pollutants having short-term air quality standards were modeled for the project only case. The results are shown in Table 5-20 of the DEIS, although the text failed to reference them. CO maximum impacts for the 1-hr and 8-hr averaging periods were 2417 µg/m^3 and 869 µg/m^3, somewhat higher than their respective significance levels of 2000 µg/m^3 and 500 µg/m^3. However, they are far below their respective air quality standards of 40,000 µg/m^3 and 10,000 µg/m^3. Maximum calculated project impacts exceed significance levels in a small area to the west of the plant site. This area includes about 0.04 sq. mi. for the maximum 1-hr impact and 0.3 sq. mi. for the 8-hr impact, both due west of the plant site. There are few sources of CO in the Ivanpah Valley, the largest probably being vehicular emissions on I-15. The Ivanpah Valley is an attainment area for CO and is clearly much

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the Las Vegas Valley. Furthermore, the Las Vegas Valley has not experienced a violation of a CO standard in four years (see response to No. 8). Based on this information and professional judgement, it was concluded that the small contribution of the proposed project to CO concentrations in the Ivanpah Valley would not threaten exceedances of CO air quality standards.

Start-up impacts for PM_{10} were only slightly above those for normal operations (18.3 $\mu g/m^3$ vs. 16.8 $\mu g/m^3$). Total PM_{10} impacts were not predicted to come anywhere near air quality standards, and this small difference would not change that conclusion.

Annual emissions for normal operations of the plant were calculated based on 100 percent load for all hours of the year. Any start-up emissions would have to be preceded by a number of hours of down time during which there would be no emissions. It was presumed that the downtime lack of emissions would make up for the additional start-up emissions. In any event, maximum annual impacts were sufficiently low so as to eliminate concerns that annual standards could be exceeded due to occasional start-up emissions. Furthermore, this is an issue that the DAQM will have to resolve before granting a permit.

As stated previously, additional modeling will be conducted by the DAQM based on updated meteorological data to ensure that the project will not endanger the attainment status of the Ivanpah Valley, including when the Ivanpah Valley Airport is considered.

M1.20 There are currently no onsite monitoring data at the site. Monitoring requirements will be determined by the DAQM in its review of the air application.