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Ref: 8EPR-N

3/08/2016
81FR12143
(3)

Cindy Bladey,
Office of Administration,
Mail Stop: OWFN–12–H08
U.S. Nuclear Regulatory Commission
Washington, DC 20555–0001

RE: Supplemental Environmental Impact Statement for the Proposed Strata Energy, Inc. Kendrick Expansion Area Scoping

Dear Ms. Bladey:

The U.S. Environmental Protection Agency Region 8 has reviewed the Nuclear Regulatory Commission's Notice of Intent (NOI) to prepare a Supplemental Environmental Impact Statement (SEIS) for the Proposed Strata Energy, Inc. (Strata), Kendrick Expansion Area (Kendrick) In Situ Uranium Recovery (ISR) Project Crook County, Wyoming. In accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA), we are providing scoping comments. The EPA recommends that these questions and concerns be addressed during the NEPA process. We are willing to work with you during the NEPA process to assist in effectively and efficiently addressing these concerns and topics.

Background

The NRC received a request from Strata Energy, Inc., to construct and operate additional uranium recovery wells at Kendrick. Kendrick covers approximately 3,186 hectares (7,784 acres) adjacent to Ross ISR Project (Ross). Ross is located in Crook County, Wyoming, 43 kilometers (27 miles) northeast of Gillette, Wyoming and 46 kilometers (29 miles) northwest of Sundance, Wyoming.

The current Ross license authorizes Strata to construct and operate the Ross ISR project, which includes ISR well fields, a central processing plant (CPP), and ancillary facilities within the 696-hectare (1,721-acre) Ross site located in Crook County, Wyoming. The Ross SEIS tiered off the ISR Generic Environmental Impact Statement (GEIS). The Kendrick SEIS will tier from and incorporate by reference the GEIS and the Ross SEIS.

The Kendrick SEIS will analyze the environmental impacts of the proposed action, the no-action alternative, and reasonable alternatives. The no-action alternative would be to deny the license amendment application. The proposed federal action is to issue a license amendment authorizing the expansion of Ross ISR activities to Kendrick. In its environmental report, Strata identified a potential

alternative involving the construction of a satellite ion-exchange facility within Kendrick. Under this alternative, lixiviant from the proposed Kendrick well fields would be pumped to a satellite facility within Kendrick rather than to the Ross CPP. At the Kendrick satellite facility, uranium would be extracted in ion-exchange columns and transported to either the Ross CPP or another licensed facility for processing into yellowcake. Other alternatives may be identified during scoping or through the environmental review process.

Key Topics the EPA Recommends the NRC Address during the NEPA Process

The EPA has identified the following topics that we recommend be analyzed and disclosed in the Draft SEIS, so that potential impacts to public health and the environment can be fully understood: (1) plan or operational adjustments based on the Ross ISR Project (2) air resources; (3) groundwater resources; (4) surface water resources; (5) public drinking water supply resources; (6) wetlands, riparian areas and floodplains; (7) water and wastewater management; (8) background radiation levels; (9) greenhouse gas (GHG) emission and climate change; and (10) environmental justice.

(1) Plan or Operational adjustments based on the Ross ISR Project

The Ross ISR Project began operations in early December 2015. Although currently it has not been operating for a long period, lessons learned from the plans and operation of this facility should be considered in the Kendrick Expansion NEPA process. In addition, any common issues from ISR operations across Wyoming should be considered when assessing the impacts and mitigation measures for this project.

(2) Air Resources

Air Quality

The EPA recommends that the Draft SEIS include an evaluation of the current air quality conditions and trends as well as the direct, indirect, and cumulative impacts from potential activities for:

- Each of the criteria pollutants and their appropriate National Ambient Air Quality Standards (NAAQS), i.e., ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead;
- AQRVs in potentially impacted Class I areas and sensitive Class II areas;
- Prevention of Significant Deterioration increment at potentially impacted Class I and Sensitive Class II areas;
- HAPs and relevant health-based risk thresholds for HAPs including acetaldehyde, benzene, ethyl benzene, formaldehyde, n-hexane, toluene, xylene (mixture), and any other compounds that the NRC identifies as potential hazardous air pollutants resulting from the Kendrick expansion project; and
- Existing sources associated with the Ross ISR project.

We recommend that the EPA be invited early in the process to provide input on the air quality analyses conducted prior to the Draft SEIS being published. The EPA recommends that the NRC identify in the Draft SEIS the mitigation measures it would apply to the project in the event that potential adverse impacts to air quality or AQRVs are predicted. These measures could include equipment type or design requirements, best management practices (BMPs), and dust suppression measures.

40 CFR Part 61, Subpart W

On May 2, 2014, the EPA issued a Notice of Proposed Rulemaking with proposed revisions to Subpart W. The EPA is now evaluating the comments and information received to prepare the Final Rule for the Subpart W standards. Please reference our April 4, 2014, letter on the Ross ISR Final SEIS for more information about the current rule and EPA's role in approval of impoundment construction. We are hoping the revised rule will be finalized this year. Any surface impoundment expansions, modifications or additions under the Kendrick SEIS should consider the applicable rule at the time of the SEIS development.

Groundwater Resources

Groundwater Resource Characterization

It is important to characterize both the existing and potential groundwater drinking water resources in the proposed project area. We recommend the Draft SEIS include the following information:

- A description of all aquifers in the proposed project area, noting which aquifers are Underground Sources of Drinking Water (USDWs). Federal Safe Drinking Water Act regulations define a USDW as an aquifer or portion thereof: (a)(l) which supplies any public water system; or (2) which contains a sufficient quantity of groundwater to supply a public water system; and (i) currently supplies drinking water for human consumption; or (ii) contains fewer than 10,000 mg/l total dissolved solids; and (b) which is not an exempted aquifer (See 40 CFR Section 144.3);
- Available water quality and water yield information from each aquifer;
- A stratigraphic column of the onsite geology indicating each of the aquifers down to and including the Madison;
- Legible maps depicting the location of sensitive groundwater resources such as municipal watersheds, source water protection zones, and recharge areas;
- Descriptions and locations of groundwater use (e.g., public water supply wells, domestic wells, springs, and agricultural and stock wells and all monitoring wells); and
- A map and discussion of proposed wells, existing wells, and nonproducing wells in the area including their status (e.g., idle, shut-in, plugged, and abandoned), if available.

The maps should be readable in black and white printable formats.

Groundwater Impacts, Monitoring and Mitigation

The EPA recommends that the Draft SEIS provide information about the potential impacts from the proposed project expansion to groundwater quality and quantity. Potential impacts include those associated with both operation and restoration (e.g., production and disposal of waste water, consumptive groundwater use, migration of contaminants outside of the production zone/exempted aquifer).

The EPA recommends that the Draft SEIS include discussion of groundwater protection, monitoring and mitigation measures. Specifically:

- Pump tests for each production zone, demonstrating confinement prior to any commencement of production, as required by the underground injection control permitting process;
- A general well schematic for production and injection wells that depicts the following: casing strings; cement outside and between the various casing strings; and the relationship of the well casing design to potentially important hydro-geological features such as confining zones and aquifers or aquifer systems that meet the definition of a USDW. Discuss how the generalized design will achieve effective isolation of USDWs from production activities and prevent migration of fluids of poorer quality into zones with better water quality;
- Abandonment procedures for sealing wells no longer in use in order to reduce the potential for inactive wells to serve as the conduits for fluid movement between production zone(s) and aquifer(s). This is particularly important where existing wells do not have surface casing set into the base of USDWs and lack sufficient production casing cement;
- Plans for action in the event of an excursion; and
- Assurances and measures that will be in place should the project activities temporarily cease due to economic or other reasons.

(3) Surface Water Resources

Surface Water Characterization

The EPA recommends the Draft SEIS describe the current water quality conditions for surface water bodies within the project area, including intermittent, perennial, and ephemeral streams, rivers, lakes, reservoirs, and surface water drinking water resources. We recommend comparing existing conditions to existing water quality standards or other reference conditions and presenting associated water quality status and trends. The EPA also recommends that potential impacts to the surface waters bodies in the project area be analyzed.

The EPA recommends the Draft SEIS include the following information:

- A map of water bodies within and/or downstream of the proposed project area that includes perennial, intermittent and ephemeral water bodies; water body segments classified as water quality impaired or threatened under the Clean Water Act (CWA) Section 303(d); water

bodies considered not impaired by, and water bodies that have not yet been assessed for impairment status. We also recommend that a table be provided to identify the designated uses of water bodies and the specific pollutants of concern, where applicable; and

- Maps and descriptions of topography and soils, specifically steep slopes and fragile or erodible soils, especially near surface waters and intermittent/ephemeral channels.

The maps should be readable in black and white printable formats.

Surface Water Impacts

We recommend that the Draft SEIS analyze potential impacts to surface waters related to erosion and sedimentation from land disturbance and stream crossings. We also recommend that the NRC analyze potential impacts to impaired water bodies within and/or downstream of the planning area, including water bodies listed on the most recent EPA-approved CWA § 303(d) list. Additionally, we suggest coordinating with WDEQ if there are identified potential impacts to impaired water bodies (in order to avoid causing or contributing to the exceedance of water quality standards).

Surface Water Mitigation

Contaminants from surface events such as spills have the potential to enter and impact surface water resources if these events occur in close proximity to water bodies. If surface activities are set back from the immediate vicinity of surface water, wetlands, and designated source water protection zones, this provides an opportunity for accidental releases to be detected and remediated before impacts reach water resources. If accidental releases are not detected, the setback provides a safety factor and some possibility of natural attenuation occurring. Setbacks also help prevent nonpoint source pollutants such as sediments from impacting surface waters. Accordingly, the EPA recommends that the NRC evaluate setback distances for surface water resources, including perennial waters, intermittent and ephemeral streams, and impaired waters within the project area.

(4) Public Drinking Water Supply Sources

Public Drinking Water Supply Source Characterization

The EPA recommends that groundwater and surface water sources of public drinking water supplies, and the associated source water assessments and source water protection zones, be identified in the Draft SEIS. This will help ensure that public drinking water supply sources (e.g., surface water sources, including groundwater under the direct influence of surface water (GWUDISW) sources, and groundwater sources) are protected from potential impacts associated with project area activities.

To assist you with this effort, the EPA Region 8 can develop a map showing the generalized areas of the source water assessments and protection zones in/near the project area. Such a map may be used in public documents; therefore, we recommend including it in the Draft SEIS.

Public Drinking Water Supply Source Mitigation

In order to ensure public drinking water supply sources are protected from potential impacts associated with resource extraction, the EPA recommends the following no surface occupancy (NSO) protections for Municipal Supply Watersheds [1] - NSO within any of the following areas, as deemed appropriate by the NRC:

- The entire watershed; or
- Local Source Water Protection Planning Areas where delineated in a Source Water Protection Plan; or
- Surface Water Spill Response Region or Groundwater Inventory Region defined by Source Water Assessments that have been delineated or evaluated by the state.

(5) Wetlands, Riparian Areas and Floodplains

We recommend that the Draft SEIS present inventories and maps of existing wetlands and waters of the U.S. within the project area, including waters that are regulated under Section 404 of the CWA and wetlands and waters that are protected under Executive Order 11990 - Protection of Wetlands (May 24, 1977). We suggest providing information on acreages and channel lengths, habitat types, values, and functions of these waters.

We suggest that the NRC describe potential direct, indirect, and cumulative impacts to wetlands and riparian areas that could occur at the project level due to impacts on the following:

- Stream structure and channel stability;
- Streambed substrate, including spawning habitats; and
- Stream bank vegetation, riparian habitats, and aquatic biota.

Project activities have the potential to cause changes in hydrology due to surface disturbance, compaction and increased run-off. These changes in hydrology may result in stream structure failure and additional sediment loading of wetlands and riparian areas.

We recommend that the Draft SEIS analyze methods to protect wetlands, riparian areas and floodplains, including the following:

- Application of minimum setback requirements such as NSO for wetlands and riparian areas. The EPA recommends NSO within the footprint of wetland and riparian areas, as well as a 500 foot NSO setback from wetland and riparian areas;
- Stipulations to protect floodplains, such as NSO within the 100-year floodplain; and
- Delineation of perennial seeps, springs and wetlands on maps and on the ground prior to project development to ensure identification and protection of these resources.

[1] Forest Service Manual (FSM2542) defines Municipal Supply Watersheds to include: "surface supply watersheds, sole source aquifers and the protection zones around wells and springs."

(6) Water and Wastewater Management

Water demand and wastewater production associated with the proposed expansion activities is an important consideration that will benefit from analysis and disclosure. We recommend that the Draft SEIS include a general discussion of the following:

(1) Potential impacts of the water withdrawals (e.g., drawdown of aquifer water levels, reductions in stream flow, impacts on aquatic life, wetlands, and other aquatic resources);
(2) Options and potential locations for managing the wastewater (i.e., UIC wells, evaporation ponds, and surface discharges);
(3) Target injection formations, formation characteristics and depth of any UIC wells;
(4) Potential impacts of wastewater management; and
(5) Options for water reuse and recycling within the project.

The EPA recommends that the Draft SEIS address how water quality monitoring, including private well monitoring, will occur at the project level prior to, during, and after the anticipated expansion development in order to detect any impacts to both surface water and groundwater resources.

(7) Background Radiological Conditions in the Proposed Project Area

Understanding the preoperational radiological conditions in the project expansion area is important in determining impacts that may result from the proposed action. The EPA recommends that both the background radionuclide concentrations, and the development of a data set demonstrating variations in local background over the entire proposed project area be established. Data on background radiological conditions for soil should be collected to establish a reliable baseline data set.

(8) Greenhouse Gas Emissions and Climate Change

The EPA recommends that NRC include in the Draft SEIS an estimate of the GHG emissions associated with the project during construction and operation, a qualitative description of relevant climate change impacts, and practicable mitigation measures to reduce project-related GHG emissions. In addition, we recommend that the analysis include GHG emissions from reasonably foreseeable downstream emissions such as coal transportation and electrical power generation. We suggest the following approach:

"Affected Environment" Section

We recommend that the Draft SEIS describe potential changes to the affected environment that may result from climate change. Including future climate scenarios in the Draft SEIS would help decision makers and the public consider whether the environmental impacts of the alternatives would be exacerbated by climate change. If impacts may be exacerbated by climate change, additional mitigation measures may be warranted.

For example, impacts could be exacerbated in a case where a project draws water from or injects wastewater into an area that may support underground sources of drinking water. If future climate scenarios predict declining precipitation to a level at or below aquifer recharge rates, drawdown due to the project could impact important drinking water resources while an increased injection of wastewater may cause unintended impacts to an aquifer with reduced recharge rates. Alternatively, in some scenarios predicted changes in climate could potentially reduce project related impacts. One such example could be a reduction of pollutants and erosion caused by stormwater runoff volumes in areas where precipitation is expected to decrease.

"Environmental Consequences" Section

The EPA recommends that the Draft SEIS estimate the GHG emissions associated with the proposal and its alternatives. Example tools for estimating and quantifying GHG emissions can be found on CEQ's website.[2] These emissions levels can serve as a reasonable proxy for climate change impacts when comparing the alternatives and mitigation.

"Cumulative Impacts and Reasonably Foreseeable Actions"

Since this is an expansion of the Ross ISR project the Draft SEIS should discuss the cumulative impacts for these two projects. Additionally, we recommend that this Draft SEIS address the potential cumulative impacts from all reasonably foreseeable actions in the area including oil and gas and other mining projects.

Mitigation

The EPA recommends that the Draft SEIS describe measures to reduce GHG emissions associated with the project, including reasonable alternatives or other practicable mitigation opportunities, and disclose the estimated GHG reductions associated with such measures. The EPA further recommends that the Draft SEIS provides commitment to implementing reasonable mitigation measures that would reduce or eliminate project-related GHG emissions.

Climate Change Adaptation

The EPA recommends that NRC discuss how future climate scenarios addressed in the "Affected Environment" section may impact the proposal. Changing climate conditions can affect a proposed project, as well as the project's ability to meet the purpose and need presented in the SEIS. In addition to considering the resilience and preparedness of a facility itself, in some cases adaptation measures could avoid potentially significant environmental impacts.

(9) Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," applies to federal agencies that conduct activities that substantially affect

[2] https://ceq.doe.gov/current_developments/GHG_accounting_methods_7Jan2015.html

human health or the environment. Consistent with this order, the EPA recommends the NEPA analysis for the Kendrick Expansion Draft SEIS include the following:

- Identification of any minority, low-income and tribal communities within the geographic scope of the impact area, including the sources of data and a description of the methodology and criteria utilized. The EPA recommends comparing census block group percentages (if available, or, at a minimum, census tract data) for below poverty and minority populations with the state average, and conducting the following steps if a block group percentage is greater than the state average. The EPA does not recommend use of higher thresholds.
- A detailed assessment of environmental justice and other socioeconomic concerns for any environmental justice communities, to the extent information is available, including:
  - A discussion of the potential direct, indirect and cumulative environmental impacts of potential NRC-authorized project activities on the health of these communities, including air quality and water quality and quantity impacts.
  - An evaluation of the socio-economic impacts to the local communities, including the potential for any additional loading placed on local communities' abilities to provide necessary public services and amenities.
  - A determination of whether there may be disproportionately high and adverse impacts, including cumulative impacts, on the identified communities.
- Mitigation measures to reduce any disproportionate adverse impacts. We recommend involving the affected communities in developing the measures. The EPA recognizes the need for early involvement of the local communities, and supports the meaningful participation of community representatives in the NEPA process.

Closing

Thank you for the opportunity to participate in the scoping process for the Kendrick Expansion ISR Project. The EPA hopes our comments will assist the NRC in developing an analysis that will adequately address potential environmental impacts and identify appropriate mitigation measures. Although we are not designated cooperating agency, if resources allow, we welcome the opportunity to provide early input through review of preliminary documents. In the past, we have found the review of preliminary documents as an effective way to assist the NRC in developing the Draft and Final SEIS.

If you have any questions or comments, please contact our Lead Reviewer for this project, Lisa Lloyd at 303-312-6537 or lloyd.lisa@epa.gov.

Sincerely,

Philip S. Strobel
Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

Electronic cc: Jessie Muir Quintero, NRC