State of Utah

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Department of
Environmental Quality

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*Executive Director*

DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL

Douglas J. Hansen
*Director*

March 8, 2024

Vern C. Rogers, Director of Regulatory Affairs
Energy*Solutions*, LLC
299 South Main Street, Suite 1700
Salt Lake City, UT 84111

RE: Federal Cell Facility Application Request for Information

Dear Mr. Rogers:

The Division of Waste Management and Radiation Control (Division) hereby provides follow up Requests for Information (RFI) regarding the Federal Cell Facility Application dated August 4, 2022.

Each RFI in the attached document represents a follow up to an RFI issued earlier in the application review process. The numbering system ties the additional questions to the initial RFI with an added letter designation. When responding to an RFI, please use the assigned number representing the question.

With this round of follow up RFIs, the Division recommends that appropriate staff from the Licensee, the Division, and consultants meet to discuss each matter for clarity.

Please contact Otis Willoughby at 385-622-2213 to schedule a meeting.

Sincerely,

Jaylynn Knudsen for:

Douglas J. Hansen, Director
Division of Waste Management and Radiation Control

(Over)

DRC-2024-004817

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DJH/OHW/JMK/wa

Enclosure: Federal Cell Application Review, Requests for Information or Updates to the Application (RFI)

c: Jeff Coombs, EHS, Health Officer, Tooele County Health Department
Bryan Slade, Environmental Health Director, Tooele County Health Department EnergySolutions
General Correspondence Email
LLRW General Correspondence Email

# Federal Cell Application Review

## Request for Information or Updates to the Application (RFI)

**General**

- Each of the RFI's has been assigned an identifier with a numbering convention as follows -
  - Application/Appendix Section
    - Section/Appendix Subsection
      - Section/Appendix Subsubsection (when applicable)
        - Sequential numbering

*Example: A question in Section 1, subsection 1, subsubsection 1 -The first RFI # would be 1.1.1-1, the next question in that section/subsection would be numbered 1.1.1-2*
**Please refer to the assigned RFI number when submitting a response.**

***Appendix O:***

***SIBERIA Modeling***

**0-38.a**

The long-term stability of the Federal Cell Facility (FCF) and the requirement for ongoing maintenance after closure must be based upon analyses of active natural processes. The analyses must provide reasonable assurance for long-term stability of the FCF, and that upon closure of the FCF (10 CFR Part 61.13), ongoing active maintenance will not be necessary.

Questions remain regarding the use of SIBERIA as a tool to evaluate the long-term stability/erosion of the FCF. The processes leading to rill-gully channelization of landforms are stochastic and driven by threshold precipitation events at the Clive site.

The SIBERIA model for the FCF uses the same precipitation magnitude in each time step, yet gullying is a threshold dominated event driven by particularly large storm events. It appears to the Division that the SIBERIA model is not incorporating the stochastic-threshold processes needed to begin rill-gully formation and not channelization and may lack the resolution to capture these events. As for calibration of the SIBERIA model, the RHEM model itself does not seem to result in significant channeling, gullying or headward erosion, and using a RHEM model to calibrate a SIBERIA model could lead to a poorly calibrated model and does not give realistic results. The calibration of the model by matching sediment flux also does not capture the spatial/temporal distribution of erosion that is important to the long-term stability of the FCF. The approach of Tucker (Tucker 2004) using a divergence of the sediment flux might provide a more realistic model.

Given the concerns with gullying, the Division requests that Energy*Solutions* either modify the SIBERIA model to account for stochastic precipitation or develop an updated model that can address the concerns outlined.