

Sequoyah Fuels Corporation

2014 Annual Performance Based License Report

Background

By letter dated 24 September 2009, Sequoyah Fuels Corporation (SFC) submitted a request to amend License SUB-1010 to enable SFC to make changes to the Reclamation Plan without approval of U.S. Nuclear Regulatory Commission (NRC). The request was subsequently revised by letters dated 25 March 2010 and 04 October 2010. The NRC staff reviewed the proposed license condition and determined that it was comparable to license conditions that are in other NRC licenses for similar sites, and could be implemented without being detrimental to the safety of the facility or public. The NRC approved the request on 12 December 2010 as License Condition 54 of Amendment 35 to License SUB-1010 [ML102740426].

Objective

The aforementioned license amendment effects a performance based license condition (PBL) delegating additional regulatory authority to SFC for various aspects of license activities. The authority may be exercised such that any change does not erode the basis for the NRC's original licensing decision. It is recognized that the review conducted by the licensee is not a review of safety or environmental acceptability: the licensee is obligated to ensure that any change considered should be safe and environmentally acceptable. Rather the licensee provides a determination of whether the proposed change(s) require prior NRC review; i.e., the licensee is responsible for determining if the proposed change needs to be submitted to the NRC. There will be circumstances where the licensee finds that the proposed change is acceptable; however, it may still require a NRC review.

Responsibility

SFC's determinations concerning the PBL are made by the Plant Review Committee (PRC). The PRC completes the determinations in accordance with a written operating procedure.

Scope

The PBL includes, in summary, that the licensee shall furnish, in an annual report to the NRC, a description of changes made pursuant to the PBL. The report shall include a summary of the safety and environmental evaluation of each change. This letter serves as the annual report for 2014.

Additionally, the licensee shall submit to the NRC, changed pages, which shall include both a change indicator for the area changed and a page change identification to reflect changes made pursuant to the PBL. The required submittal is included herein as Reclamation Plan Sequoyah Facility,

- Attachment E, Disposal Cell Construction Plan for the Sequoyah Fuels Corporation Facility, May 2014 (Plan).
- Attachment E, ..., Appendix H, Rock Durability, November 2014
- Attachment A, Technical Specifications for the Sequoyah Fuels Corporation Disposal Cell, July 2014 (Technical Specifications).

Requirement

The PBL requires, in summary, that the determinations concerning the PBL be made with respect to frequency or consequences of accidents evaluated or accidents different than evaluated, or an increase in likelihood of occurrence or a different occurrence of a malfunction of a facility structure, equipment, or monitoring system (SEMS) important to safety previously evaluated.

Results

The PBL was applied four times in 2014. A description of each change is as follows:

Control Number	Description of Change
CL010	<p><u>Technical Specifications</u> –</p> <p>The Technical Specifications at section 6.3.4.2 were revised to include additional detail regarding the maximum allowable size of voids within the incompressible debris. The incompressible debris includes pipes of varying diameters that often cannot be crushed, using standard construction equipment. The contractor may “nest” pipes of varying sizes within each other, in order to reduce the size of the voids and minimize the collapse potential of single pipes. If nesting is used, the smallest pipe diameter within the group of pipes should be 6 inches or less. The voids resulting from nesting pipes will be smaller than the maximum allowable size described in the Technical Specifications and do not require filling with soil or grout.</p>
CL011	<p><u>Disposal Cell Construction Plan</u> –</p> <p>The Plan is revised at Section 4.2 to recognize modification of the collection system discharge. The leachate collection and leak detection system design consists of two synthetically lined ponds for each phase of the cell. These ponds were sized for liquid storage during construction (when the disposal cell is open to direct precipitation). After cell completion, direct precipitation on the disposal cell will be shed as stormwater runoff. The leachate collection and leak detection system ponds will be larger than necessary and will collect a large proportion of direct precipitation. Liquids from the leachate collection and leak detection systems will be routed to a tank for storage, and as necessary a pond may be used for liquid storage or for temporary storage of meteoric water.</p> <p>A tank will be added to collect and contain liquids from the leachate collection and leak detection systems. The existing sumps will be systematically decommissioned, but will continue to be used for collection and storage of water in the interim and during the decommissioning process. The existing leak detection and leachate collection piping from all three phases will be modified to include valves allowing for the conveyance of water, either to one of the existing sumps, or to the tank. This will allow direction of impacted water to one point of collection for treatment and non-impacted water to a second point of collection.</p>

CL012

Technical Specifications –

Sections 2.6.3, 3.4, 3.5, 7.2.5, 7.2.8, and 7.4.6 are revised to allow all areas within the facility boundary to be considered as borrow sources, provided the materials meet the project specifications. Editorial revisions are also made to provide internal consistency.

Section 7.3.5 is modified to include a reduced thickness of subsoil (4.25 feet) as a result of the current erosion protection design for the sideslopes, which increases the rock layer thickness by 0.5 feet and includes a filter layer of 0.25 feet. This is a change from the original design described in the specifications, however the overall thickness of the cover layer remains 10 feet. This section will be revised again to reflect final cell design.

CL013

Disposal Cell Construction Plan, Appendix H Rock Durability –

The Reclamation Plan identifies Souter quarry (a local limestone quarry) as the source of rock for riprap for the disposal cell. The purpose of this change is to revise the Reclamation Plan (RP), Attachment E Disposal Cell Construction Plan (Plan), Appendix H Riprap Durability to recognize evaluation and approval of additional sources of rock for riprap. SFC is evaluating other rock sources for supply of riprap for reasons of availability and economy.

Rock durability is not discussed in the main text of the RP. Rock durability is recognized at Section 2.3 of the Plan: Rock of acceptable size and durability ... is available from nearby commercial sources of limestone (Appendix H). The durability testing of the Souter quarry limestone was completed in conformance with NUREG-1623. The Plan at Appendix H evaluates the durability of Souter quarry limestone, concluding that it is suitable for use as riprap on the disposal cell.

SFC has since completed durability testing of two other potential rock sources: Hanson Mountain quarry and Roberts (APAC) quarry. The durability of rock from these sources was also completed in conformance with NUREG-1623. The Plan at Attachment E, Appendix H now includes the results of the durability testing of these two other potential rock sources. The Plan concludes that rock from each source is suitable for use as riprap on the disposal cell.

Subsequently, the specifications for the rock will be provided in the Technical Specifications. The specifications will be particular to the disposal cell as constructed, including consideration of durability of the selected rock. Revision of the Technical Specifications will be evaluated in a separate review.

These changes are also identified by the respective control number within the included copy of the subject plan.

A summary of the safety and environmental evaluation of these changes follows:

- i. The accidents evaluated in the license application do not consider the design or construction of the disposal cell thus there is not an increase in the frequency of occurrence of an accident previously evaluated.
- ii. The evaluations in the license application do not consider any functioning facility structure or equipment thus there is not an increase in the likelihood of occurrence of a malfunction of a SEMS important to safety.

The evaluations in the license application may be construed to include monitoring systems discussed at the following sections of the Final SER:

- 3.7 Construction Considerations
 - ... leachate [sic] detection system ...
 - ... leachate collection system ...
- 5.3 Disposal Cell Design
 - ... leak detection system ...
 - ... leachate collection system ...
- 5.4 Detection Monitoring
 - [groundwater] detection monitoring system

Specifications for incompressible debris within the disposal cell, identification of borrow areas, and rock durability are not considerations in the evaluations and/or topics described in the above listed sections of the FSER.

The evaluation of combining the collection system discharge concluded that the collection system discharge could be modified as described without adverse effect to performance of the collection system.

- iii. The accidents evaluated in the license application do not consider the design or construction of the disposal cell thus there is not an increase in the consequences of an accident previously evaluated.

- iv. The evaluations in the license application do not consider any functioning facility structure or equipment thus there is not an increase in the consequences of a malfunction of a SEMS previously evaluated.

The evaluations in the license application may be construed to include monitoring systems discussed at the following sections of the Final SER:

- 3.7 Construction Considerations
 - ... leachate [sic] detection system ...
 - ... leachate collection system ...
- 5.3 Disposal Cell Design
 - ... leak detection system ...
 - ... leachate collection system ...
- 5.4 Detection Monitoring
 - [groundwater] detection monitoring system

Specifications for incompressible debris within the disposal cell, identification of borrow areas, and rock durability are not considerations in the evaluations and/or topics described in the above listed sections of the FSER.

The evaluation of combining the collection system discharge concluded that the collection system discharge could be modified as described without adverse effect to performance of the collection system.

- v. The changes to the plans do not reduce the performance or function of the disposal cell, thus there is not a possibility for an accident of a different type than any previously evaluated in the license application.
- vi. The evaluations in the license application do not consider any functioning facility structure or equipment thus there is not a possibility of a malfunction of a SEMS with a different result than previously evaluated.

The evaluations in the license application may be construed to include monitoring systems discussed at the following sections of the Final SER:

- 3.7 Construction Considerations
 - ... leachate [sic] detection system ...
 - ... leachate collection system ...
- 5.3 Disposal Cell Design
 - ... leak detection system ...
 - ... leachate collection system ...
- 5.4 Detection Monitoring
 - [groundwater] detection monitoring system

Specifications for incompressible debris within the disposal cell, identification of borrow areas, and rock durability are not considerations in the evaluations and/or topics described in the above listed sections of the FSER.

The evaluation of combining the collection system discharge concluded that the collection system discharge could be modified as described without adverse effect to performance of the collection system.

- vii. The changes do not result in a departure from the methods of evaluation described in the license application (as updated) used in establishing the FSER or the EIS or other analyses and evaluations.

The methods of evaluation for rock durability were the same methods documented in the Reclamation Plan, including responses to NRC requests for additional information. The analyses and evaluations of rock durability do not provide results or conclusions different than provided in the license application.

Conclusion

Application of the PBL in calendar year 2014 was limited to the Disposal Cell Construction Plan, including Appendix H thereof, and the Technical Specifications. The changes were consistent with the NRC conclusions, or the basis of, or analysis leading to, the conclusions of actions, designs, or design configurations analyzed and selected in the site or facility Safety Evaluation Report (April 20, 2009 [ML090260323]) and Environmental Impact Statement (NUREG-1888, May 2008 [ML081300103]). This includes all supplements and amendments, and safety or technical evaluation reports, environmental assessments, and environmental impact statements issued with amendments to License SUB-1010.