Sequoyah Fuels Corporation
2018 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 2018.

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 A, Technical Specifications for the Sequoyah Fuels Corporation Disposal Cell, 26 January 2018 (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 one time in 2018. A description of the change is as follows:

Control Number	Description of Change
CL017	The intent of the modifications is to improve constructability of the cover and ease production difficulties for the material producers while maintaining the level of erosion protection intended by the original design.

Technical Specifications –

Section 7.2.5 was modified to remove the separate gradation for the erosion protection on the north and west slopes and require a minimum D50 of 5.3 inches for all rock mulch, regardless of which slope is the rock placed on. A single gradation will be used for the cover slopes. **Section 7.2.6** was modified to require a minimum D50 of 9.2 inches for apron rock. The ranges of particle sizes for both types were broadened to allow for ease of production while still meeting the minimum size requirements. The gradations were modeled after those listed in Appendix F, NUREG 1623 (Johnson, 2002). The specifications were also modified to include metric units in addition to inches.

Sections 7.2.5 and **7.2.6** were also each modified to reference the 2002 NUREG 1623 document rather than the 1990 Staff Technical Position. The 2002 document updated and replaced the Staff Technical Position in its entirety. This change to the Technical Specifications is a change to the technical reference and does not constitute a change to the rock durability requirements or methods used for the design. The rock is limited to a minimum required rock score of 65 and any rock scoring 71 or less would require additional oversizing, since the most recent set of testing for the selected quarry included a rock quality score of 72 and the sizing in the specifications is based on that result.

Section 7.3.6 is revised to include the updated thickness of the apron rock material. Because revised calculations indicated the need for increased median rock sizes on the slopes, the thickness of the layers changed, to maintain a minimum thickness of twice the D50 for layer thickness on the side slopes and three times the D50 for the apron.

Sections 7.4.5 and **7.4.6** have been modified to include specifications for sampling and testing, by qualified personnel; and for the competency and the gradations of the rock materials to be verified, at the quarry for acceptance, prior to delivery to the site. In addition, the ASTM reference has been changed to the standard applicable to riprap rather than soil. ASTM 5519 is "...applicable to sizes 3 inches (75 mm) and above, with the upper size limited only by equipment available for handling and weighing the individual particles." ASTM 422 applies to soil, with particle sizes 3-inches or less, and most of the material to be used on the project for rock mulch and apron rock will be sizes larger than 3 inches. The option to use "equivalent" testing methods allows for confirmation of the rock gradation by particle measurements (dimensions) in place of weights, if necessary. The required gradation and durability testing frequency is modified to align more closely with the sample specifications included in Appendix F of NUREG-1623 (Johnson, 2002). Additional test frequency has been included in the initial third of the produced rock volume testing to verify the quarry is meeting the gradation specification.

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 include the cover system. No change to the construction or performance of the cover system is implied or required here. No change to the placement of the material cell with respect to the overlying soils (i.e., soils between the material cell and the cover system) and cover system is implied or required here.

The changes to the Technical Specifications were developed to maintain the original design effectiveness.

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 include the cover system. No change to the construction or performance of the cover system is implied or required here. No change to the placement of the material cell with respect to the overlying soils (i.e., soils between the material cell and the cover system) and cover system is implied or required here.

The changes to the Technical Specifications were developed to maintain the original design effectiveness.

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 include the cover system. No change to the construction or performance of the cover system is implied or required here. No change to the placement of the material cell with respect to the overlying soils (i.e., soils between the material cell and the cover system) and cover system is implied or required here.

The changes to the Technical Specifications were developed to maintain the original design effectiveness.

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.

Conclusion

Application of the PBL in calendar year 2018 was limited to 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.