

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

In the Matter of)	
)	
SEQUOYAH FUELS CORPORATION,)	Docket No. 40-8027
)	
(Request to Amend Source Material)	
License No. SUB-1010))	May 14, 2003

**STATE OF OKLAHOMA'S
REQUEST FOR HEARING**

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Dated: May 14, 2003

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REQUEST FOR HEARING

The Attorney General of the State of Oklahoma, W.A. Drew Edmondson, by and through Kelly Hunter Burch, Assistant Attorney General, on behalf of the State of Oklahoma and the Oklahoma Department of Environmental Quality (hereinafter “the State”), hereby requests a hearing pursuant to 10 CFR §2.1205 on the matter of Sequoyah Fuels Corporation’s (hereinafter “SFC”) Request to Amend Source Material License No. SUB-1010 to address reclamation of its site near Gore, Oklahoma. In support of this Request for Hearing, the State would show the U.S. Nuclear Regulatory Commission as follows:

I. FACTUAL AND PROCEDURAL HISTORY OF THE SFC SITE

The SFC site is a former uranium conversion facility located adjacent to both the Illinois and Arkansas Rivers at their confluence in Oklahoma. SFC commenced operations at its site near Gore, Oklahoma (the “Site”) under Source Material License No. SUB-1010, which was originally issued to Kerr-McGee Corporation in 1969 for the storage of uranium ore concentrate. Sequoyah Fuels Corporation, Site Characterization Report, 2-3 (December 15, 1998). Source Material License No. SUB-1010 was amended in 1970 to permit the

conversion of uranium oxide (yellowcake) to uranium hexafluoride (UF₆). Id. In 1987, Source Material License No. SUB-1010 was amended to authorize the reduction of depleted uranium hexafluoride (UF₆) to uranium tetrafluoride (UF₄). Id.

In 1988, the SFC site was transferred from Kerr-McGee Corporation to General Atomics, who is the third-tiered parent company of SFC. See General Atomics v. U.S. Nuclear Regulatory Comm'n, 75 F.3d 536, 537-38 fn. 1, (9th Cir. 1996); Institute for Energy and Environmental Research, Environmental Issues at Sequoyah Fuels Corporation's Uranium Conversion Plant near Gore, Oklahoma 11 (1992). Not long thereafter, in September of 1990, Source Material License No. SUB-1010 expired. SFC Site Characterization Report, Id. at 2-3.

A license renewal application was submitted to the Nuclear Regulatory Commission, (the "NRC"), which, by rule, permitted the continued operation of the SFC site. Id. During this time, the SFC site was the subject of increasing public and regulatory scrutiny, triggered by the 1986 hexafluoride accident involving the explosion of a cylinder containing over 31,000 pounds of uranium hexafluoride (UF₆), releasing a cloud of hydrogen fluoride and uranyl fluoride, resulting in the death of one SFC employee and injuries to dozens of SFC employees and members of the public. Celia Campbell-Mohn, et al., Environmental Law - From Resource to Recovery, 595 (1993).

NRC ordered an environmental investigation of the SFC site in the fall of 1990, which was completed in July of 1991. Environmental Issues at SFC's Uranium Conversion Plant, Id. at 12. The Facility Environmental Investigation revealed high levels of uranium

in the soil and groundwater at the SFC site, including other contaminants such as nitrate and arsenic. Id. On-going environmental and management problems at the SFC site caused NRC to order the SFC site to shut down in October of 1991. Id. The SFC site remained shut down until April of 1992 when a planned phased start-up was initiated. Id.

Seven months later, on November 17, 1992, another accident at the SFC site generated a large cloud of toxic nitrogen dioxide (NO₂) that traveled offsite, injuring SFC employees and the public. Native Americans for a Clean Environment, Silent Sirens, 1 (1993). Four days after this incident, SFC and General Atomics met in San Diego to discuss the future of the SFC site and, due to the probability of shutdown and General Atomics' apparent unwillingness to make further monetary advances, it was decided not to restart the uranium hexafluoride (UF₆) process. See Bradley v. Sequoyah Fuels Corp., 847 F. Supp. 63, 866-67 (E.D. Okla. 1994). On November 23, 1992, a partnership named Converdyn was formed to service SFC's contracts for uranium hexafluoride (UF₆) production in Metropolis, Illinois. Id. at 866. SFC notified the NRC in 1993 that it intended to cease activities and decommission the SFC site, and to terminate Source Material License No. SUB-1010, which required decommissioning of the Site for unrestricted release.

On or about December 15, 1998, SFC submitted its First Revised Decommissioning Plan for the SFC site to the NRC, requesting an amendment to Source Material License No. SUB-1010 to decommission the SFC site for restricted release pursuant to 10 CFR §20.1403. The decommissioning plan proposed utilizing an on-site, above-grade disposal cell for the permanent disposal of waste, including long-lived radioactive materials such as uranium,

thorium and radium. The disposal cell would have a volume of between 5,000,000 and 11,000,000 cubic feet, a foot print of approximately ten (10) acres, and a height of approximately 40 feet above grade. It would be located less than one-quarter of a mile from the Illinois River, one (1) mile from the Arkansas River, and just yards from streams on the SFC site.

The NRC rejected the First Revised Decommissioning Plan on February, 11, 1999, for failure to meet the minimum criteria for technical review. On or about March 26, 1999, SFC submitted its Second Revised Decommissioning Plan for the SFC site to the NRC. The second plan requested restricted release and contained an identical plan for construction of a disposal cell. On May 20, 1999, the NRC notified SFC that the Second Revised Decommissioning Plan contained sufficient information to begin technical review.

On June 9, 1999, the NRC published its Notice of Consideration of an Amendment Request for Sequoyah Fuels Corporation and Opportunity for a Hearing in the Federal Register. In response to the Notice, and in accordance with its terms and the terms of 10 CFR § 2.1201 et seq., Oklahoma timely filed its Request for Hearing on July 7, 1999, which was ultimately granted by the Presiding Officer on December 12, 1999, and upheld on appeal to the Commission. That proceeding is currently pending before the Presiding Officer.

On January 5, 2001, SFC requested that the NRC determine whether certain waste material from the solvent extraction portion of its uranium hexafluoride (UF₆) conversion process could be classified as Atomic Energy Act, 11(e)(2) byproduct material. SFC submitted a similar request to reclassify certain waste at the SFC site as 11(e)(2) byproduct

material in 1993. In a July 1993 memorandum to the Commission, the Executive Director for Operations, supported by the Office of General Counsel, concluded that the waste was not 11(e)(2) byproduct material. However, by Staff Requirements Memorandum to SECY-02-0095, dated July 25, 2002, the Commission concluded that some unspecified amount of the SFC waste could be classified as 11(e)(2) byproduct material.

On September 30, 2002, SFC submitted an application requesting that Source Material License SUB-1010 be amended to “possess 11(e)(2) byproduct material.” An NRC administrative review found the request to be acceptable to begin technical review and, on November 14, 2002, published its Notice of Consideration of Amendment Request for Sequoyah Fuels Corp., Gore, OK and Opportunity for Hearing in the Federal Register. The State of Oklahoma, the Cherokee Nation, Citizens’ Action for Safe Energy, and fifteen individuals filed timely requests for hearing pursuant to 10 CFR §2.1205. On December 11, 2002, NRC Staff approved SFC’s request for a license amendment to “possess” 11(e)(2) byproduct material and notified SFC that the facility would be regulated as a “uranium recovery facility” under 10 CFR Part 40.¹ On January 7, 2003, the NRC designated a single member of the Atomic Safety and Licensing Board Panel to serve as the Presiding Officer in the proceeding. That proceeding is currently pending before the Presiding Officer.

In a letter to NRC dated January 28, 2003, SFC submitted a Reclamation Plan (RP) for the SFC site pursuant to the newly amended License No. SUB-1010 Condition 48.

¹ The license amendment was approved by NRC staff prior to the end of the time allowed to request a hearing and incorporated additional modifications that were not contained in SFC’s amendment request or the public notice.

License Condition 48 requires SFC to submit a reclamation plan, including milestones for completion, to the NRC by March 15, 2003. SFC's Reclamation Plan, once again, proposes the construction of an onsite disposal cell with a capacity of between 5 to 12 million cubic feet to permanently dispose of the highly radioactive and hazardous wastes at the Site. Reclamation Plan Sequoyah Facility, page 1-5 (January 2003). The cell would be designed to hold both wastes classified as 11(e)(2) by NRC staff and the non-11(e)(2) wastes. SFC still intends to locate the disposal cell on top of the most highly contaminated areas of the Site and less than one-quarter of a mile from the Illinois River, one (1) mile from the Arkansas River, and just yards from streams on the SFC site.

On March 24, 2003, NRC notified SFC that it had completed its acceptance review of the RP and that no omissions or deficiencies were "significant enough to preclude continuing the review."² On April 15, 2003 the NRC published its Notice of Receipt of Amendment Request and Opportunity to Request a Hearing on the cleanup and reclamation plan for the SFC site in the Federal Register.

II. REQUEST FOR HEARING

A. Requirements for Requests for Hearing under 10 CFR §2.1205.

The provisions of 10 CFR Part 2, Subpart L govern any adjudication initiated by a Request for Hearing in a proceeding for the amendment of a materials license subject to 10

² NRC staff also submitted a series of Requests for Additional Information stating that, after SFC responded to the requests, a schedule for further review would be established. The Requests for Additional Information related to the site geology, seismology, geotechnical stability, surface water hydrology, erosion, water resource protection, and disposal of non-11(e)(2) materials. March 24, 2003 NRC Acceptance Letter to John Ellis from Susan M. Frant, Enclosure.

CFR Part 40. This request for hearing relates to SFC's request to amend its license to address reclamation of the SFC site.

In Subpart L proceedings, a request for hearing by a person other than an applicant must describe in detail (1) the interest of the requestor in the proceeding; (2) how those interests may be affected by the results of the proceeding; (3) the requestor's areas of concern about the licensing activity that is the subject matter of the proceeding; and (4) the circumstances establishing the timeliness of the hearing request. 10 CFR §2.1205(e)(1)-(4).

Additionally, the requestor must demonstrate standing, taking into consideration (1) the nature of the requestor's right under the Atomic Energy Act to be made a party to the proceeding; (2) the nature and extent of the requestor's property, financial or other interests in the proceeding; and (3) the possible effect of any order that may be entered in the proceeding upon the requestor's interest. 10 CFR § 2.1205(h). In determining whether a requestor's interest may be affected by a licensing proceeding, NRC looks to judicial concepts of standing. *Id.* Thus, a requestor's injury must arguably fall within the zone of interests sought to be protected by the statutes governing the proceeding (e.g. the Atomic Energy Act, 42 U.S.C. 2011 *et seq.*). Atlas Corporation (Moab, Utah Facility), LBP-97-9, 45 N.R.C. 414, 423 (1997). A request for hearing must allege injury-in-fact; the injury must be fairly traceable to the challenged action; and the injury must be redressable by the Commission. *Id.*, Lujan v. Defenders of Wildlife, 504 U.S. 555, 560-61 (1992); In the Matter of Sequoyah Fuels Corporation (Gore, Oklahoma Site Decommissioning) CLI-01-02, 53 N.R.C. 9 (2001).

While the person requesting the hearing has the burden of establishing standing, the Presiding Officer must construe the petition in favor of the person requesting the hearing. Georgia Institute of Technology (Georgia Tech Research Reactor), CLI-95-12, 42 N.R.C. 111, 115 (1995). In order to demonstrate standing at this stage, Oklahoma does not have to prove the merits of its case. See Warth v. Seldin, 422 U.S. 490, 500 (1975). Rather, in determining standing, it is incumbent upon the Presiding Officer to accept as true Oklahoma's material allegations. In the Matter of Georgia Institute of Technology (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 N.R.C. 281, 286 (1995).

Lastly, the Presiding Officer must determine whether the areas of concern specified by the requestor are germane to the subject matter of the proceeding. 10 CFR § 2.1205(h). An area of concern is germane if it is relevant to whether the license should be denied or conditioned. In the Matter of Hydro Resources, Inc., LBP-98-9, 47 N.R.C. 261, 280 (1998). Areas of concern must fall generally within the range of matters that are properly subject to challenge in the proceeding and must be rational. Babcock v. Wilson Company (Pennsylvania Nuclear Services Operations, Parks Township, Pennsylvania), LBP-94-12, 39 N.R.C. 215, 217 (1994).

B. Oklahoma's Interests in the Proceeding and the Effect of the Proceeding on those Interests.

SFC is requesting that Materials License SUB-1010 be amended to authorize reclamation of the SFC site pursuant to the requirements of 10 CFR Part 40, Appendix A, NUREG 1620 and in accordance with NRC Regulatory Issues Summary 2000-23,

(November 30, 2000) ("RIS-2000-23"). SFC's basic plan for the decommissioning of the Site is to construct a large, partially lined cell directly in a terrace groundwater formation and adjacent to the confluence of the Illinois and Arkansas Rivers in Oklahoma. The cell will be used for permanent disposal of all site wastes, including long-lived radioactive and hazardous wastes, including but not limited to uranium, thorium and radium. The RP contains vague and often conflicting details regarding the cell design, cleanup levels, groundwater monitoring, waste preparation, waste characterization, and site characterization. Furthermore, the RP submitted by SFC is not protective of human health and the environment, and does not comply with the relevant statutory and regulatory requirements for decommissioning the site.

Under 10 CFR 2.1205(a), any person whose interests may be affected by the NRC's approval of SFC's Reclamation may file a request for a hearing. The State has numerous property, financial, sovereignty, regulatory, public trust, and other interests that will be affected by approval of this RP. As trustee for natural resources, the State is responsible for protecting the environment, as well as the public health, safety, and welfare of its citizens, including those living in the vicinity of the SFC site. The State also has an interest in assuring that facilities within its boundaries are regulated in manner consistent with the AEA and implementing regulations. The Department of Environmental Quality is the state agency that is responsible for abating pollution in surface and ground waters of the State and for implementation of delegated federal environmental programs that SFC is required to comply with in carrying out the provisions of its RP.

In addition to owning the waters in certain defined streams located on the SFC site, the State owns the waters in the Salt Branch, the Illinois River, the Arkansas River, Lake Tenkiller, and Robert S. Kerr Lake, each of which is located near the SFC site, and some of which are hydrologically connected to contaminated groundwater under the SFC site. These surface waters are used for recreation and have designated beneficial uses of public water supply, irrigation and fish and wildlife propagation. The State also operates and manages the Robert S. Kerr Unit of the McClellan-Kerr Wildlife Refuge, which is located in close proximity to the SFC site, and leases certain agricultural rights and privileges in the refuge to third parties. Additionally, the State owns and operates certain roads and thoroughfares in close proximity to the SFC site.

The State's interests will be affected by this proceeding because the SFC facility is located in the State of Oklahoma and the RP, if approved, will result in pollution and damage to the land, air, waters, environment, natural resources, and citizens of the State of Oklahoma. The RP involves a significant source of radioactivity producing an obvious potential for offsite consequences, including direct effects upon Oklahoma's interests.

Approximately 110,000,000 kg of uranium, containing impurities such as arsenic, molybdenum, vanadium, thorium-230 and radium-226, was processed during the operation of the SFC site. See Wymer, R.G.; Vondra, B.L. Jr., Light Water Reactor Nuclear Fuel Cycle, CRC Press (1981). SFC estimates that approximately 260,000 kg of uranium remain onsite at various locations. Second Revised Decommissioning Plan Appendix H, Response 69 (March 26, 1999). SFC proposes to remediate approximately 186,000 kg of uranium in

its RP leaving approximately 74,000 kg unaccounted for. Reclamation Plan Appendix A, Table 1.

As a result of operations, accidents and releases, the SFC site, including its soils, groundwater, and surface waters are contaminated by uranium, thorium-230, radium-226, nitrate, and fluoride.³ Sequoyah Fuels Corporation, Site Characterization Report § 4.0 (December 15, 1998). SFC has also identified significant quantities of non-radiological contaminants in the soil, wastes, sediments, and groundwater at the Site. Sequoyah Fuels Corporation, Draft Corrective Measures Study (October 27, 1997); Sequoyah Fuels Corporation, 1998 Annual Groundwater Report §§ 3.0, 3.1 (January 29, 1999).

Because the RP submitted by SFC does not meet the requirements of the AEA and implementing regulations as set forth herein, continued pollution of state resources and damage to its citizens is practically inevitable. In the event of a release from the partially lined disposal cell and contaminated site soils, waters and other natural resources owned or managed by the State will be directly harmed and polluted. Construction of a disposal cell at the SFC site will also damage the beauty and aesthetic quality of the scenic areas surrounding the SFC site.

Moreover, the State of Oklahoma, and its political subdivisions, derive revenue from income taxes, sales taxes, and ad valorem taxes which revenues will be harmed in the event the NRC approves the proposed RP. The proposed RP will result in removal of a large

³ Of the significant radioactive contaminants at the SFC site, radium-226 appears to have the lowest half-life, i.e., about 1,600 years. The half-life of thorium-230 is approximately 80,000 years. Meanwhile, the half-life of uranium is approximately 4,500,000,000 years.

portion of the SFC site from all future use, thereby destroying viable real property in the State and rendering it incapable of generating ad valorem tax revenue for the State and its political subdivisions. The amendment will erode the tax base relied on by the State and its political subdivisions for revenue by lowering the value of real property in the area surrounding the SFC site

The State also has an interest in assuring that long-term custodianship and management of any disposal cell constructed and operated within its borders is adequately provided for in plans approved by the NRC. SFC failed to demonstrate that it will be able to provide a long-term custodian and financial assurances for its proposed on-site disposal cell. Because SFC intends to dispose of waste which has not been classified as 11(e)(2) in the proposed disposal cell, the Department of Energy (the "DOE") is not required to assume long-term custodianship for the Site and SFC has failed to provide an alternative in the event the DOE declines responsibility. SFC's failure to assure the existence of a viable, competent long-term custodian for radioactive waste disposal cell poses obvious and significant environmental, safety and financial concerns to the State.

(1) Oklahoma has Standing to Request a Hearing.

The NRC has previously held that the State had standing to request a hearing on SFC's proposed decommissioning plan based on substantially similar concerns raised by the State In the Matter of Sequoyah Fuels Corporation (Gore, Oklahoma Site Decommissioning) CLI-01-02, 53 N.R.C. 9 (2001). As set forth above, the State will be injured in the event that SFC's RP is approved by the NRC in its current form.

A presumption of standing based on geographic proximity may be applied in cases involving non power reactors where there is a determination that the proposed action involves a significant source of radioactivity producing an obvious potential for offsite consequences. In the Matter Georgia Inst. of Technology (Georgia Tech Research Reactor), CLI-95-12, 42 N.R.C. 111, 116 (1995). The RP involves a significant source of radioactivity producing an obvious potential for offsite consequences, including direct effects upon Oklahoma's interests. Thus, the State is presumed to have standing in this matter due to its ownership of streams, land, air, and property on or in the immediate vicinity of the SFC site. Further, the State has standing based on its financial, regulatory and public trust interests, as well as its sovereign duty to protect the interests of its citizens from the injuries outlined above. See e.g. Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Organization), CLI-98-13, 48 NRC 26, 33 (1998) (holding "the strong interest that a governmental body ... has in protecting the individuals and territory that fall under its sovereign guardianship establishes an organizational interest for standing purposes.")

The actual and threatened injuries to the State's interests and its citizens that will be caused by approval of SFC's Reclamation Plan are likely to be redressed by a favorable decision in this matter because a hearing on the issues raised could result in substantial modification, conditioning or disapproval of SFC's Reclamation Plan. As the Presiding Officer has the authority to approve, deny, or condition any licensing action that comes under his or her jurisdiction, Oklahoma's injuries are capable of being remedied in this proceeding and, therefore, the redressability element of constitutional standing is fully-satisfied. See e.g.;

In the Matter of Int'l Uranium (USA) Corp. (Receipt of Material from Tonawanda, New York), LBP-98-21, 48 N.R.C. 137, 148 fn. 6 (1998).

(2) Oklahoma's Areas of Concern Are Germane to the Proceeding.

All of the issues and concerns raised below are germane to the proceeding because they relate to compliance with the statutes, regulations and guidance governing issuance of licenses and license amendments under the AEA, and are relevant to whether the SFC's license amendment should be denied, conditioned or modified. The issues and concerns stem from the fact that SFC's proposed RP is inadequate to protect human health and the environment from the hazards associated with the cleanup and permanent disposal of radiological and non-radiological contaminants at the Site.

As set forth in detail below, the State's Areas of Concern relate to SFC's compliance with the AEA and implementing requirements in 10 CFR Part 40 Appendix A, 10 CFR Part 20, NUREG 1620, and RIS-2000-23 in proposing NRC approval of the Site RP.⁴ Areas of Concern related to SFC's plan for managing both radiological and non-radiological contamination of the air, land and water at the Site are germane to this proceeding under 42 U.S.C. Section 2114. Additionally, the State's Areas of Concern detailed below that will be considered in the NRC Staff's NEPA review are to be considered germane to this proceeding. See In the Matter of Sequoyah Fuels Corporation (Gore, Oklahoma Site

⁴ While the State has requested a hearing on the issuance of a license to possess 11(e)(2) byproduct material at the SFC site, SFC has submitted, and NRC Staff has accepted for Technical Review, a Reclamation Plan submitted under these statutes, regulations and guidance. The fact that the State disagrees with this reclassification does not render the State's concerns regarding SFC's compliance with the statutes, regulations and guidance under which NRC will review the Reclamation Plan non-germane.

Decommissioning) LBP-99-46, 50 N.R.C. 386, 404 (1999) (holding that substantially similar Areas of Concern were germane in a Request for Hearing on SFC's Decommissioning Plan).

C. Oklahoma's Areas of Concern with Regard to the License Amendment.

Under Subpart L, the State's pleading burden is modest and the State must only present its areas of concern with enough specificity so that the Presiding Officer may determine whether the concerns are truly relevant--i.e., "germane"--to the license amendment at issue. See e.g., Babcock and Wilcox Co. (Pennsylvania Nuclear Services Operations, Parks Township, Pennsylvania), LBP-94-4, 39 NRC 47, 52 (1994). The State is not expected to set forth all concerns or substantiate its concerns exhaustively before it has access to the hearing file. In the Matter of Sequoyah Fuels Corporation, 53 N.R.C. at 16. The State is required to identify the areas of concern it wishes to raise in the proceeding in order to provide the presiding officer with the minimal information needed to ensure that the issues it desires to litigate are germane to the licensing proceeding. Id. A hearing file is not complete if the staff has not completed its environmental impact statement and safety evaluation report for the Site. Id.

The State will identify numerous areas of concern with the RP for the SFC site in the following paragraphs. These areas of concern contain enough detail to allow the Presiding Officer to determine whether the Areas of Concern are relevant and germane to the Proceeding. The State may identify additional areas of concern after it has the opportunity to review the complete hearing file, which will not include the Groundwater Monitoring and

Corrective Action Plan, Responses to Requests for Additional Information, Environmental Impact Statement and Safety Evaluation Report for some time. The Environmental Impact Statement is of particular importance to the State at the SFC site because of the nature of the contamination, the Site's proximity to important natural resources owned and managed by the State, and the obvious potential for migration of contaminants from the Site which will result in injury to those resources.

SFC's proposed plan for cleanup and disposal of materials contaminated by radiological and non-radiological pollutants is vague and often conflicting regarding the cell design, cleanup levels, groundwater monitoring, waste preparation, waste characterization, and site characterization. It does not contain the level of detail necessary to demonstrate that the RP will protect human health and the environment. Numerous areas of documented contamination are improperly omitted from the RP, such as certain defined streams and drainages, an injection well, land application areas, and fertilizer pond areas. As a result of SFC's failure to provide a cogent plan, as set forth in more detail below, it is practically impossible to analyze the full impact of the proposal on Oklahoma's interests. The lack of an adequate plan, in and of itself, poses a serious threat to the State's interests. Additionally, however, the State has identified the following areas of concern:

- (1) 10 CFR Part 20 Should be Applied to the Decommissioning of the Site.

Because SFC intends to dispose of non-11e.(2) byproduct material wastes in a disposal cell, SFC made no distinction between the 11(e)(2) materials and the non-11(e)(2)

materials in the RP. Reclamation Plan Sequoyah Facility, page 1-4. While it is clear that use of RIS-2000-23 is appropriate for determining whether the non-11(e)(2) material can be disposed of in an 11(e)(2) disposal cell, this guidance does not resolve significant issues at the SFC site, such as determining the appropriate dose criteria and cleanup levels for soil and groundwater contaminated by non-11(e)(2) waste.

Contrary SECY-02-0095⁵, SFC is proposing that the entire Site be decommissioned solely in accordance with the Standard Review Plan for the Reclamation of Mill Tailings Site Under Title II of the Uranium Mill Tailings Radiation Control Act of 1978 (NUREG 1620) and 10 CFR Part 40, Appendix A. SFC assumes that the rules for milling operations govern decommissioning of the Site, yet these rules were not intended nor designed to apply to waste with radiological and non-radiological characteristics like the SFC waste.⁶ For example, NUREG 1620 provides that “[t]his standard review plan is intended to cover only those aspects of the NRC regulatory mission related to the reclamation of mill tailings sites, including soil and ground-water cleanup, at conventional uranium mills.”

⁵ The Executive Director of Operations therein stated that “[t]he LTR would apply to non-11e(2) byproduct material, and Appendix A to the mill tailings. The release criteria for mill tailings and source material are both protective, but different in their approaches. SFC could request an exemption from one set of regulations, assuming the exemption criteria would be met.” SECY-02-0095, p. 7, fn. 6. SFC has not requested an exemption nor attempted to demonstrate that exemption criteria could be met.

⁶ According to the Differing Professional View in SECY-02-0095, it is evident that the Sequoyah facility wastes are very different, radiologically, from uranium mill tailings. Uranium and thorium concentrations are two orders of magnitude higher for the Sequoyah wastes, and present an increased radiological risk, while radium concentrations are less than half that typical of uranium mill tailings. For the Sequoyah facility wastes, the primary radiological concern would be the uranium and thorium content, rather than radon diffusion into the environment, as stated in sec. 2.(a) of UMTRCA. SECY-02-0095 Attachment 9.

While Appendix A and NUREG 1620 contain certain requirements that are appropriate for decommissioning the SFC site, it is clear that the standards were designed for mill tailings sites and not to protect against all the hazards associated with a site of this nature. Conversely, the Part 20 rules for license termination were designed specifically for facilities such as the SFC site.

Further, assuming for the sake of argument that a portion of the waste at the SFC site qualifies as 11(e)(2) byproduct material, it would be contrary to the Subpart E regulations to exclusively apply the provisions NUREG 1620 and 10 CFR Part 40, Appendix A to the non-11(e)(2) waste and the portions of the Site which are contaminated by non-11(e)(2) waste. Because NRC Staff has determined that the SFC site contains both 11(e)(2) and non-11(e)(2) waste, the provisions of 10 CFR Part 20 relating to license termination apply equally to the SFC site.

SFC is required to demonstrate compliance with the license termination rules in Part 20 in order to receive approval to decommission the Site. Further, given the increase radiological risk at the SFC site, the NRC should require compliance with Part 20 in order to protect public health, safety and the environment.⁷ Additionally, even if SFC were able to demonstrate compliance with Appendix A for construction of the disposal cell, SECY-02-0095 provides that the remainder of the Site is required to be released for unrestricted use

⁷ This fact was recognized by Chairman Meserve in approving the reclassification of waste at the SFC site when he stated that while the increased radiological concentrations do not affect the waste classification, “[i]t does indicate, however, that staff will have to consider the special character of the wastes in assuring protection of public health and safety.” Commission Voting Record on SECY-02-0095 (July 25, 2002).

under the Part 20 and/or Appendix A of Part 40.

SFC wholly failed to address its compliance with Part 20 in the RP. SFC's failure to apply Part 20 to the design of its RP is contrary to law and poses an unreasonable danger to the public health and safety. Further, as demonstrated below, SFC's plan does not meet the Part 40 requirements and a disposal cell should not be constructed at the Site. Instead, the entire Site should be decommissioned for unrestricted release.

(2) SFC Failed to Establish Proper Dose and Cleanup Criteria.

The provisions of SFC's Reclamation Plan dealing with soil cleanup and dose criteria are not adequate to protect public health, safety and the environment. SFC is required to comply with the dose criteria and soil cleanup levels mandated by both Part 20 and Part 40 because the Site contains 11(e)(2) and non-11(e)(2) wastes. Both approaches require that radiation dose from uranium and thorium be as low as reasonably achievable (ALARA). Part 40 utilizes the radium benchmark dose approach to determine the total effective dose equivalent ("TEDE") from residual radioactivity. Part 20 sets forth the TEDE for restricted and unrestricted release by rule. Soil cleanup levels are selected by derived concentration guideline levels which are required to achieve compliance with the dose criteria.

In the RP, SFC only applied the requirements of Part 40 to select the TEDE and soil cleanup criteria. This approach is contrary to law because SFC is also required to apply the requirements of Part 20. Further, the radium benchmark approach, and thus the resulting cleanup level, is not appropriate for the SFC site due to the unusually high concentrations of uranium and thorium, and the low levels of radium as compared to a typical uranium mill

tailings site. See e.g., SECY-99-0046; Radiological Criteria for License Termination of Uranium Recovery Facilities, Final Rule 62 Fed. Reg. 39058 (July 1, 1997).

Regardless, SFC misapplied the radium benchmark dose calculation and resident farmer scenario as described in NUREG 1620 Appendix H. For example, the site characterization information is contrary to the information SFC used to establish the area and depth of the contaminated zone, a non-existent uncontaminated zone was used in the model, the groundwater pathway was not considered, the watershed was improperly defined, the actual extent of contamination was not considered, cell failure was not considered, and the model did not contain a variability analysis. See Reclamation Plan, Appendix G. SFC also improperly excluded cleanup of the 005 Drainage from the RP by underestimating the dose, failing to account for uranium toxicity, and failing to establish criteria for non-radiological contaminants.

Based on this analysis, SFC selected 54 mrem/year as the benchmark dose for the Site. The results of the radium benchmark dose calculations are required to be used to establish a surface and subsurface soil dose limit for residual radionuclides other than radium, as well as a limit for surface activity on structures that will remain after decommissioning. NUREG 1620, Appendix H at 2.2.1 The resulting DCGL's are required to be ALARA. Id. The DCGLs and SFC's "cleanup levels" for uranium, thorium and radium at the SFC site are contained in Table 3-1 of the RP. There is no explanation given for SFC selection of 100 pCi/g as a "cleanup level" in Table 3-1. SFC assumes, without

demonstrating, that the proposed levels are ALARA.⁸ Further, SFC states that the levels will be applied exclusive of background but, in Appendix D at 4.1.1, SFC admits that background for radium and thorium are inaccurate. Although required by NUREG 1620, SFC failed to consider the chemical toxicity of uranium, which is found in soluble forms at the Site, in establishing the soil uranium cleanup level as required by NUREG 1620, Appendix H at 2.2.3(1). SFC also failed to develop cleanup levels for non-radiological contaminants as required by Appendix A, Criterion 6.

Even though SFC sets forth an extensive analysis of its DCGL calculation, SFC never actually selects a cleanup level for the Site. There are at least five potential cleanup levels referenced in RP, and SFC even specifically states that the volume of contaminated soil to be disposed of ranges from 0.5 to 3.0 million cubic feet “depending on the final soil cleanup criteria that is selected.” Reclamation Plan, at 3-4. At a “minimum,” SFC proposes only to remediate soils under the cell footprint to 560 pCi/g⁹ and to excavate soil where “perched groundwater exceeds 150 pCi/l.” Reclamation Plan, at 3-5. SFC did not demonstrate how this “minimum” cleanup plan satisfies the dose criteria in Part 20 or Part 40.

⁸ Values such as litigation expenses, lost tax revenues (ad valorem tax, sales tax, employment tax, etc.), current and future land use, the cultural, historic, recreational, industrial, and ecologic value of the land surrounding the SFC site, and the decay period associated with the radioactive wastes at the SFC site, as well as the substantial risks that will accrue from disposal of long-lived radioactive wastes at the SFC site, all must be included in any meaningful and accurate ALARA analysis. Moreover, the potential value (societal, economic, etc.) to Oklahoma, and its political subdivisions, of the unrestricted use of all of the SFC site must also be included in the ALARA analysis. See e.g. NUREG-1727, Appendix D (NRC, 2000)

⁹ The State further objects to SFC’s plan to leave such high levels of uranium in the soils below the footprint of the cell because this concentration will cause contamination of the groundwater and the hydrologically connected surface waters and will assure that SFC or the long term custodian will be unable to accurately monitor cell performance.

Further, SFC's Final Status Survey in Appendix B of the RP is inadequate to demonstrate that residual radioactivity satisfies the criteria in Part 20 and Part 40. SFC does not provide adequate justification for its classification of "impact areas" at the Site, and the use of the benchmark dose derived DCGLs as a screening tool is not adequate to assure that the Site meets the dose requirements in Part 20 and Part 40. SFC's use of CLw and CLemc as cleanup levels for the final status survey is inappropriate given the analysis above. The use of CLemc is particularly inappropriate for the Site because there is no definition of this term, except that it represents an elevated concentration, and there is no justification presented for why the CLw cannot be met.

(3) SFC Does Not Satisfy the Requirements of RIS-2000-23.

RIS-2000-23 Attachment 1 sets forth NRC's Interim Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments. The guidance contains eight factors which an applicant must meet in order for NRC to approve disposal of non-11(e)(2) material in a tailings impoundment. SFC intends to dispose of all waste at the Site in a disposal cell for 11(e)(2) byproduct material. Appendix A to the RP contains SFC's effort to address each of the eight considerations of RIS-2000-23, and to demonstrate that disposal of the SFC non-11e.(2) byproduct material wastes in the disposal cell is consistent with NRC policy. Reclamation Plan, page 1-4.

SFC failed to demonstrate compliance with RIS-2000-23 and, accordingly, cannot be authorized to dispose of non 11(e)(2) materials in the proposed disposal cell. Each of the relevant criterion will be addressed separately as follows:

Criterion 1- In reviewing licensee requests for the disposal of wastes that have radiological characteristics comparable to those of Atomic Energy Act of 1954, Section 11e.(2) byproduct material in tailings impoundments, the Nuclear Regulatory Commission staff will follow the guidance set forth below.

SFC argues that it meets the requirements of Criterion 1 because the non-11(e)(2) materials have radiological characteristics similar to 11(e)(2) byproduct material, and in fact, the non-11(e)(2) materials are actually more similar in concentration to “typical mill tailings” than the waste it claims should be classified as 11(e)(2). SFC has conveniently designated all of the most contaminated material at the Site as 11(e)(2) material which was generated as a result of its “front end process,” including 90 percent of the soils, 100 percent of the raffinate sludge, 50 % of the solid waste burials, and 100 percent of the sanitary sewage sludge, as well as the sludge and liners in the majority of the other lagoons at the facility. SFC asserts that only 23 percent of the contamination at the Site is due to the actual conversion and reduction processes at the Site and, of course, that waste contains only 8% of the radioactivity. The RP does not contain any justification for SFC’s waste classification determinations.

Not all of the waste claimed by SFC to be 11(e)(2) waste should be classified at such by the NRC. For example, soils and sediments at the SFC site were contaminated by both the “front end” processes and by actual operations at the Site. Contrary to SFC’s assertions, the concentrations of uranium in these soils have been documented to be as high at 7,100

pCi/g as opposed to “typical soils” at mill tailings site which contain 0.75 pCi/g.¹⁰ Reclamation Plan, Appendix B at 6. Sediments at the SFC site have been documented to contain concentrations of uranium as high as 520 pCi/g. Reclamation Plan, Appendix D at 4-50. The same analysis holds true for the other waste sources at the Site. SFC should be required to identify all non-11(e)(2) wastes and provide a justification for the classification.

While it is obviously in SFC’s best interest, SFC’s attempt to classify the vast majority of the wastes in this manner is contrary to law and is a blatant attempt to avoid the requirements of license termination rule. It is clear that the radiological concentrations of uranium and thorium in the SFC waste are significantly higher than those found in typical mill tailings. SFC’s attempt to simply rename the vast majority of the waste at the Site does not change the fact that placing this type of waste in a tailings impoundment, under regulations designed to address much lower radiological concentrations, poses a serious threat to human health and the environment.

This fact was recognized by the DPV Panel in its statement that the mix of radionuclides at the SFC site are significantly different than those analyzed in the Generic Environmental Impact Statement, and that those differences would need to be addressed in the design of a decommissioning plan for the Site. SECY-02-0095 Attachment 8. Accordingly, SFC has not satisfied the requirements of Criterion 1.

¹⁰ Oddly, SFC represented to the NRC in Table 2 of its January 2001 request for evaluation of whether a portion of its waste could be reclassified that the maximum concentration of uranium in soils was 1,548 pCi/g.

Criterion 3 The 11e.(2) licensee must provide documentation showing necessary approvals of other affected regulators (e.g., the U.S. Environmental Protection Agency or State) for material containing listed hazardous wastes or any other material regulated by another Federal agency or State because of environmental or safety considerations.

SFC claims that there are no necessary approvals of other regulators because the non-11e.(2) materials do not contain any wastes that are listed as hazardous under the Resource Conservation and Recovery Act (RCRA), and there is no other Federal or State agency that regulates the land disposal of any of the constituents of the non-11(e)(2) byproduct material because of environmental considerations. In support of this argument, SFC refers to Attachments 1 and 2 of Appendix A which purportedly contain a chemical and TCLP analysis of the CaF sludge. However, these attachments are missing from Appendix A and, in any event, would be inadequate to demonstrate that the SFC waste does not contain hazardous waste.

Contrary to SFC's assertions, the U.S. Environmental Protection Agency ("EPA") and the Oklahoma Department of Environmental Quality ("ODEQ") have jurisdiction over hazardous wastes and other materials at the SFC site. The EPA has issued a RCRA 3008(h) Administrative Order for cleanup of the SFC site due to releases of hazardous wastes, including numerous metals, PCBs and solvents, into the air, land and water at the SFC site. Further, the soils, groundwater, and sediments at the Site, including those wastes which SFC claims are non-11(e)(2), are contaminated with hazardous waste according to the Final RCRA Facility Investigation Report and Draft Corrective Measures Study for the Site.

The ODEQ also has jurisdiction over hazardous wastes, air quality, solid wastes,

asbestos disposal, nitrate contamination, and pollutant discharges at the Site. Portions of SFC's plan to dispose of the non-11(e)(2) material in a disposal cell requires approval by the ODEQ. For example, lagoon closures, land application, discharges and groundwater remediation are regulated by the ODEQ pursuant to OPDES Permit No. OK0000191. Asbestos disposal is regulated by the ODEQ pursuant to OAC 252:100-41-16. Solid and hazardous waste disposal is also regulated by the ODEQ pursuant to Title 27A of the Oklahoma Statutes.

SFC failed to obtain approvals from both the EPA and the ODEQ for numerous activities proposed in the RP as required by Criterion 3. All of these approvals are necessary prior to approving disposal of non-11(e)(2) material in the proposed disposal cell.

Criterion 4 The 11e.(2) licensee must demonstrate that there will be no significant environmental impact from disposing of this material.

SFC claims that because the materials are similar in nature to the materials it classifies as 11(e)(2), there will be no negative environmental impact from the disposal except for an approximate 20 percent increase in volume. Once again, SFC attempts to ignore the fact that the waste at the facility has a radiological content much higher than typical mill tailings and that the waste contains non-radiological contaminants such as the hazardous constituents subject to a RCRA 3008(h) Administrative Order on Consent. SFC failed to evaluate the impacts to surface and groundwater from disposing of this material in a tailings impoundment and simply asserts without proof that there will be no environmental

impact. As demonstrated more fully in the following propositions, given the properties of the waste and the inadequacies of the cell design, disposal of this waste in a disposal cell at the SFC site will significantly impact both surface and groundwater.

Criterion 5 The 11e.(2) licensee must demonstrate that the proposed disposal will not compromise the reclamation of the tailings impoundment by demonstrating compliance with the reclamation and closure criteria of Appendix A of 10 CFR Part 40.

SFC states that Sections 3 and 4 of the Reclamation Plan demonstrate that disposal will not compromise compliance with Appendix A. Those sections contain the cell design and quality assurance plan for the Site. Neither of these sections demonstrate that disposal of non-11(e)(2) waste in the cell will not compromise compliance with Appendix A and, in fact, the cell design set forth in Section 3 does not comply with Appendix A. In order to demonstrate that disposal will not compromise compliance, SFC would, at a minimum, need to provide a complete characterization of the waste, analyze any adverse reactions from disposal of these types of waste, demonstrate that leachate from the cell will not contaminate surface and groundwater, and provide a cell design that complies with Appendix A.

Criterion 7 The U.S. Department of Energy (DOE) and the State in which the tailings impoundment is located, should be informed of the U.S. Nuclear Regulatory Commission findings and proposed action, with a request to concur within 120 days. A concurrence and commitment from either DOE or the State to take title to the tailings impoundment after closure must be received before granting the license amendment to the 11e.(2) licensee.

SFC addresses this issue by stating that it understands NRC will contact DOE and the State. SFC further states that it has informed the State and requested concurrence from the DOE. This issue of SFC's ability to demonstrate compliance with this Interim Guidance was identified as a key unresolved area in SECY-02-0095 which provides that SFC would be required to resolve its approach for dealing with the non 11(e)(2) waste and DOE's acceptance of it in the disposal cell prior to docketing a license application to possess 11(e)(2) materials. SECY-02-0095, 8 fn. 9.

SECY-02-0095 further provided that NRC staff would not approve a decommissioning plan which includes an 11(e)(2) cell without the non-11(e)(2) material being addressed, and that this would require the approval of the DOE, the State of Oklahoma and, potentially, the Central LLW Compact. *Id.* at 9. SFC has not resolved its approach to the non-11(e)(2) material and has not received any of the required approvals, yet NRC Staff has docketed the license amendment, granted the license amendment and even docketed the Reclamation Plan contrary to SECY-02-0095. SFC's failure to obtain these approvals seriously undermines the validity of SFC's plan and the certainty of DOE's long term custodianship.

(4) SFC's Cell Design is Inadequate and Will Result in Pollution.

SFC proposes to construct a disposal cell to permanently dispose of between 5 and 12 million cubic feet of radioactive and hazardous wastes. The bottom of the cell will be partially lined with "clay" found on site without a leachate collection system, and will be constructed directly in the terrace groundwater formation below the Site. The most

contaminated material, raffinate sludge, will be placed at the bottom of the cell and the remaining waste will be placed on top of the raffinate sludge in unconsolidated layers. SFC proposes to construct a cover for the cell with native soils found at the Site. The design details for the proposed cell are vague, often conflicting and lack the required detail regarding specifications and contaminate testing for construction materials. Contrary to the regulations and guidance, many of the “detailed” specifications are nothing more than statements that SFC may take a particular approach.

The proposed disposal cell for the SFC site does not comply with the technical criteria set forth in Appendix A of Part 40. The design is not sufficient to prevent migration of contaminants to soils and waters of the State, and will not meet radon release limits. Because uranium and thorium concentrations in the SFC waste are two orders of magnitude higher and radium concentrations are less than half that of typical uranium mill tailings, the SFC waste presents an increased radiological risk and a decreased risk from radium diffusion. SECY-02-0095, Attachment 9. Further, the SFC waste contains non-radiological contaminants that are atypical of mill tailings sites.

The impact of placing this type of waste in a tailings impoundment has not been evaluated by the NRC.¹¹ The Ad Hoc Panel Report in Attachment 8 to SECY-00-0095 states that:

¹¹ Although the Ad Hoc Panel Report recommended that the Commission Paper address the significance of the differences between the SFC waste and mill tailings, the Final Commission Paper failed to do so and, in approving the reclassification, Chairman Meserve simply observed that the NRC staff should consider the “special character” of the waste in order to protect public health and safety. SECY-00-0095, Attachment 8 and Commission Voting Record on SECY-02-0095 (July 25, 2002).

The DPV points out that the mix of radionuclides in the Sequoyah wastes are significantly different than those analyzed in the GEIS or by EPA in issuing its uranium milling standards, and that this difference would need to be addressed in any design of a decommissioning plan for this Site. Design issues could include groundwater protection, limiting water infiltration, and the ingrowth of radium from the high thorium concentration of the wastes during the 1000 year design life of the facility. Radon emanation, which was the focus of UMTRCA, does not appear to be the major radiological risk to be managed from these wastes.

SFC based its cell design solely on Appendix A, failed to address any of the differences in the characteristics of its waste in the RP, and further failed to make any design improvements that would be necessary to manage this type of waste. While it is possible to imagine a modified tailings impoundment design and siting plan that would minimize the risk from these contaminants, the SFC design is not even adequate to meet the requirements in Appendix A for wastes which poses a far lesser risk to human health and the environment.

Criterion 1 of Appendix A requires that the Site for the disposal cell be selected with the goal of permanent isolation of the tailings and associated contaminants, as opposed to short-term convenience or benefits, such as minimization of transportation or land acquisition costs. Contrary to this requirement, SFC selected the Process Area as the best option “due to proximity to materials destined for disposal, pre-existing contamination of the sub-surface, and reduced material handling costs.” Reclamation Plan, at 3-12. The site selected for the cell by SFC practically assures that contaminants associated with the wastes

in the cell will migrate into the environment. The portion of the cell that will contain the most highly contaminated waste will be constructed below grade in the terrace groundwater formation and directly above a highly vulnerable groundwater aquifer that discharge to surface waters in the area. The cell will also be constructed over existing groundwater monitoring wells that will provide a direct conduit to the groundwater formation. It will be impossible to prevent migration of contaminants from the proposed cell given its location. It is for this reason that the ODEQ has prohibited construction of landfills in terrace deposits, and hazardous waste disposal sites in areas underlain by terrace or bedrock aquifers or recharge areas shown on the "Map of Aquifers and Recharge Areas in Oklahoma" compiled by Kenneth S. Johnson, Oklahoma Geological Survey (1991). OAC 252:510-7-2(n); OAC 252:205-11-2(a). The SFC site is located in the area designated as an alluvium and terrace deposit and their recharge areas in that publication. Reclamation Plan, Appendix D Figures 12 and 13.

These problems with the siting are exacerbated by SFC's failure to design an adequate cover, liner and leachate collection system for the disposal cell in compliance with Appendix A Criterion 5 and Criterion 6. SFC's proposal to use soil, native vegetation and recycled liners from existing impoundments to serve as cover material will not prevent significant infiltration and radon emissions from the cell. The cell cover should contain a compacted clay layer to serve as an adequate radon and water infiltration barrier.¹²

¹² The input data to RADON (Appendix D) shows that the soil physical properties of the disposed and cover layers are all the same, and that there is not special radon or water infiltration barrier or drainage system in the cell cover design.

Additionally, the Radon Flux analysis in Appendix D is inadequate to demonstrate that the cell design will meet the regulatory limit of 20 pCi/m² sec in Criterion 6. For example, SFC's analysis fails to account for the ingrowth of radium from thorium. Further, although radium activity varies widely in cell layers, SFC improperly used an average weighted value for radium activity concentration. Additionally, although Layer C contains structural material, scrap metal, solid waste, contaminated drums, and materials from the CaF basins, SFC assumed that the soil physical properties were the same throughout the cell. Accordingly, the results do not adequately demonstrate that the design will meet the regulatory limit in Criterion 6.

Criterion 5A requires the disposal cell to have a liner that prevents migration of wastes out of the impoundment into the surrounding soil, groundwater and surface water. It further requires that the liner be installed to cover all areas likely to be in contact with wastes or leachate. Contrary to this requirement, SFC only proposes to install a clay liner at the very bottom of the disposal cell to the edge of Layer B. Hence, when Layers A and B are saturated, contaminated water will flow over the edge of the liner and directly to the groundwater system. Reclamation Plan, Appendix C Figure 4.4. The RP fails to provide adequate detail to demonstrate that the liner will have the appropriate chemical properties, sufficient strength and thickness, and be placed on adequate foundation to prevent failure as required by Criterion 5A(2)(a) and (b).

The probability of a release is magnified by SFC's decision to place unstabilized materials in the disposal cell and its failure to install a proper cover to serve as an infiltration

barrier. For example, SFC plans to place partially dewatered raffinate sludge containing high levels of radioactive and hazardous contaminants at the bottom of the cell. At 40 percent solids, the raffinate sludge would contain greater than 3 million gallons of free water that will be exuded into the clay liner and soils under the pressure of 25 feet of overburden and heavy equipment used to complete waste emplacement. In addition, because the cell cover does not contain an adequate water infiltration barrier, approximately 7.75 inches of rainfall will infiltrate the bottom of the cell and become contaminated with uranium for at least the first 45 years after completion of construction. Reclamation Plan, Appendix E.

The water released from wastes in the cell and contributed by the lack of a proper infiltration barrier will cause contamination of the groundwater and will compromise the clay liner. SFC did not perform any of the required testing to determine whether exposure to the collected water will cause deterioration of the liner as required by Criterion 5E, despite the fact that the Criterion indicates deterioration has been known to occur within 9 months of exposure and, by SFC's own calculations, a large amount of contaminated water will collect in the bottom of the cell for at least 45 years. Further, despite the obvious potential for release of contaminated water from the disposal cell, SFC does not propose installation of a leachate collection system as required by Criterion 5A and E, and only contends that the liner will be effective for between 200 to 1000 years although the half life of uranium at the Site is approximately 4,500,000,000 years.

SFC completely failed to evaluate the impact of the disposal cell design on surface water, groundwater and surrounding soils. Contrary to Criterion 5G, SFC failed to submit

a report detailing the chemical and radioactive characteristics of the waste, the complete information on the geological and hydrological systems, and details about site groundwater. The plan also fails to address or evaluate how SFC will manage the radiological and non-radiological waste at the Site to assure that contaminants will not exceed the groundwater standards in Criterion 5 and 13.

The only information on impacts to surface water, groundwater and soils is contained in the Hydrogeological and Geochemical Site Characterization Report in Appendix B of the Reclamation Plan. However, the disposal cell design proposed by SFC in the Reclamation Plan is substantially different from the cell design presented and evaluated in Appendix B. Further, the model in that report contains errors and invalid assumptions that severely undermine its usefulness to evaluate the impacts of the RP. For example, the model inaccurately assumes that the Site is geochemically heterogeneous, that the cell will not contribute contaminants to the groundwater, presents contributions to the river as contaminant flux, fails to consider the total discharges to the river from groundwater, failed to consider variances in Kd and porosity, lacks a legitimate risk assessment, and fails to consider existing contamination and withdrawals from the river.

SFC's plan for placing waste in the cell is also vague and contradictory. According to the RP, the exact placement sequences and criteria will be developed during the disposal cell detailed design phase. Reclamation Plan, at 3-6. It is unclear how materials will be prepared for inclusion, a factor which bears significantly on radon emissions, stability, leachate generation, and contaminant mobility. SFC also fails to provide a plan for disposal

of wastes from several significant sources of contamination, including but not limited to site drainage systems and soils from the CaF Pond, Clarifier, Pond 2, Raffinate Ponds, and Fertilizer Ponds.

In many instances, SFC simply states that stabilization may be undertaken to reduce leachability and mobility if SFC finds it technically and economically feasible.¹³ Failure to stabilize highly contaminated waste will result in decreased cell stability, increased radon emissions, and prohibited discharges of radiological and non-radiological contaminants to groundwater and hydrologically connected surface waters at the Site. Further, depending on the final design selected, certain areas that are to be used for interim storage areas and stormwater collection are actually under the cell footprint. Additionally, SFC's plan for cell performance monitoring in 6-1 of the RP is inadequate under NUREG 1620 to determine compliance and lacks a plan for corrective action in the event of cell failure.

(5) SFC Failed to Address Non-Radiological Hazards in the RP.

SFC did not fully characterize the waste and contaminated media at the Site for radiological and non-radiological materials as required by Appendix A, Criteria 5. Some information on the Site is available from the RCRA Facility Investigation Report and Draft Corrective Measures Study completed for EPA, but it is not included or evaluated in the RP. In addition to the radiological contaminants, those reports demonstrate that the soils,

¹³ For example, the RP at 3-5 states that “[i]t is likely that some of the soils in the areas of perched groundwater impact contain uranium in the forms of uranyl nitrate and related compounds, which are much more soluble than the oxide forms. Soil washing or stabilization prior to disposal will be considered for these soils to reduce the uranium content and mobility. Technical and economic evaluations will be used to determine the final treatment.”

sediments, wastes and water at SFC site are likely contaminated with hazardous wastes, heavy metals, nitrates, fluorides, certain solvents, and PCBs. Hazardous constituents at the Site include antimony, arsenic, beryllium, lead, nickel, selenium, and thallium in source media; antimony, beryllium, lead, and PCBs in soil media; antimony arsenic, barium, beryllium, cadmium, lead, selenium, silver and thallium in groundwater; and thallium in drainage area sediments. Sequoyah Fuels Corporation, Draft Corrective Measures Study (October 27, 1997); Sequoyah Fuels Corporation, 1998 Annual Groundwater Report §§ 3.0, 3.1 (January 29, 1999). The RCRA Facility Investigation Report for the SFC site also indicates that soils and groundwater is significantly impacted relative to background by As, Ba, Be, Co, Cu, Cr, Mo, Mn, Ni, Pb, Se, V and Zn.

SFC wholly failed to address any of these contaminants in its RP. Section 2114 of the AEA provides that the Commission is charged with insuring that the management of 11(e)(2) byproduct material is carried out in such manner as the Commission deems “appropriate to protect the public health and safety and the environment from radiological and non-radiological hazards associated with the processing and with the possession and transfer of such material, taking into account the risk to the public health, safety, and the environment, with due consideration of the economic costs and such other factors as the Commission determines to be appropriate.” Numerous provisions of Appendix A, including Criteria 5, 6 and 13, set forth standards and criteria necessary to protect public health, safety and the environment from the hazards associated with non-radiological contaminants. NRC is also required to evaluate the impacts of these contaminants under NEPA.

SFC is currently requesting that the EPA defer to the NRC's regulations governing non-radiological contaminants at the Site. The RP, however, absolutely fails to address the proper treatment, management, remediation, or disposal of these materials. Under SFC's plan, non-radiological contaminants will be left in soils, placed in the disposal cell, contained in groundwater, and discharged to surface water. SFC's failure to address these contaminants in the RP poses an obvious threat to public health, safety and the environment.

NRC has a duty and statutory responsibility to require SFC to develop a plan for the proper treatment, management, remediation, or disposal of these materials. The RP should be rejected failing to address non-radiological contaminants. SFC should be required to characterize the chemical characteristics of the wastes and contaminated media at the Site. SFC should also submit a revised plan to address all non-radiological contaminants at the Site, and comply with the provisions of Appendix A with regard to hazardous constituents.

6. SFC Has Not Demonstrated Adequate LongTerm Custodianship, Financial Assurance and Institutional Controls.

Despite the fact that SFC intends to permanently dispose of large volumes of long-lived radioactive and non-radioactive waste at the Site, SFC's entire plan for institutional controls is contained in two paragraphs on page 3-6 of the RP. The plan consists of fencing a portion of the Site and transferring ownership of the Site to DOE. This plan is inadequate to protect public, health, safety and the environment from contaminant releases and radiation. As detailed above, SFC has failed to comply with the dose criteria in Part 20 and the radon emission limits in Part 40. Even though SFC has failed to submit a groundwater corrective

action plan for the Site, it is extremely likely that SFC will follow its previous plan.

It is obvious that fencing a portion of the Site and transfer to DOE will not address the hazards presented by the groundwater contamination under the Site, especially considering that the groundwater discharges to surface water on and near the Site. The RP does not contain any plans for maintenance and repair of the Site, even though it is clear that maintenance bears directly on the radiation dose at the Site.

Perhaps most importantly, SFC fails to demonstrate that DOE will take custody of the Site upon completion of the proposed RP. Because SFC intends to place non-11(e)(2) material in the disposal cell, the DOE has discretion to reject long term custodianship for the Site. SFC fails to set forth a contingency plan for another long term custodian in the event DOE declines or for offsite disposal of the non-11(e)(2) waste.¹⁴ SFC's plan attempts to gloss over this important problem by assuming that DOE will take custody. DOE's decision to accept custody of the SFC site is by no means certain. According to a May 13, 2001, letter from DOE to the NRC, if NRC allows the disposal of the non-11(e)(2) material in a separate cell, DOE's decision whether "to exercise its discretionary authority to accept the transfer of the separate cell would depend in part upon compliance with the applicable requirements for site transfer, the availability of resources for long-term surveillance and maintenance, and the resolution of any outstanding liability and dual regulation issues before transfer."

¹⁴ A contingency plan for offsite disposal of non-11(e)(2) wastes is also required, as set forth in detail above, because the waste is not eligible for disposal in a tailings impoundment under RIS-2000-23. Theoretically, SFC could construct a separate disposal cell for the non-11(e)(2) material, however, SFC has not proposed this option and has been unable to locate a long term custodian other than DOE.

SFC did not address any of these issues in the RP. Without resolution of this issue, the NRC cannot conclude that SFC's plan is protective of human health, safety and the environment. SFC's plan for DOE custodianship is further undermined by lack of adequate funds for long term maintenance and surveillance. According to Table 7-1 of the Reclamation Plan, SFC is only making \$21,866 available annually for long term maintenance and surveillance over a period of approximately 50 years for a total of \$1,093,000. This amount includes only \$500 per year for maintenance and only provides funding for sampling three contaminants in the groundwater.

This amount of funding is inadequate to maintain the SFC site because it will contain long-lived radioactive materials; will require leachate collection; requires extensive groundwater monitoring for a number of hazardous and other non-radiological contaminants; and, because of its location, poses a substantial risk of pollution to surface water and groundwater.¹⁵ According to NUREG 1620 Appendix E, additional funding is required when, on the basis of a site-specific evaluation, the expected site surveillance or control requirements are determined to be significantly greater than those specified in Criterion 12 of Appendix. Active maintenance and modifications of design from Appendix A criteria are given as examples of when escalation is appropriate. SFC should be required to provide additional funding in accordance with this guidance.

Additionally, the documentation of costs set forth in Table 7-1 of the RP does not set

¹⁵ Examples of items necessary for long term site control not addressed in SFC's plan include cell repair and replacement, cell performance testing, repair or replacement of groundwater monitoring systems, remediation of contamination from cell failure, leachate collection, and site security.

forth the detail required by NUREG 1620, Appendix C and, thus, is not be adequate to comply with Appendix A, Criteria 9 and 10. Because many of the decisions regarding cleanup of the Site have not been made, the actual costs of decommissioning the SFC site could easily exceed the projections in Table 7-1. For example, SFC has not determined the volume of soil that will be cleaned up or the size of the disposal cell, and the groundwater monitoring and cleanup plan has not even been developed yet.

Given the number of modifications the RP will require to comply with Parts 20 and 40, the costs could also greatly exceed SFC's funds available for decommissioning set forth in Table 7-2 of the Reclamation Plan. Previous estimates for decommissioning the SFC site has ranged as high as \$86 million. According to SFC's own projections, their cash balance at the end of 2009 is only \$2.5 million. That represents a cushion of only 7 percent for cost overruns and contingencies above their current estimates. NUREG 1620, Appendix C provides that NRC Staff considers a 15 percent contingency to be acceptable as a minimum amount.

(7) SFC is Required to Submit Groundwater Cleanup and Monitoring Plan with the RP.

Appendix A requires SFC to develop a groundwater monitoring and corrective action plan for the SFC site. Neither plan, however, was provided in the license application for 11(e)(2) waste or in the RP. Reclamation Plan, at 1-2. The State recognizes the NRC provided SFC with additional time to submit its monitoring and corrective action plan. However, groundwater monitoring, corrective action, disposal cell design, dose criteria,

institutional controls, and soil cleanup levels are inextricably linked, and should be evaluated together to determine whether the RP is protective of human health, safety and environment.¹⁶

For example, SFC assumes, without proof, that its corrective action plan will be protective of human health and the environment in the model it used to select cleanup levels and predict radiation exposure. Reclamation Plan, at 3-7. Contrary to this assumption, SFC's plan for groundwater corrective action in its Second Revised Decommissioning Plan proposed limited cleanup for terrace groundwater and natural attenuation for the bedrock aquifer contaminated by high levels of radioactive and non-radioactive pollutants, such as uranium, arsenic and nitrate. There is no indication that SFC intends to modify this plan. Failure to include a groundwater monitoring and corrective action plan that addresses both radiological and non-radiological contaminants in the RP precludes an accurate evaluation of SFC's compliance with Part 20 and Part 40, and further precludes a conclusion by the NRC that the RP is protective of human health and the environment.

D. The State's Request For Hearing Is Timely.

As set forth above, the Notice was published in the Federal Register on April 15, 2003. Pursuant to 10 CFR § 2.1205(d), a person, other than an applicant, shall file a request

¹⁶ SFC also failed to provide information required by Part 20 and Part 40 detailing its plan for treating and disposing of wastewater generated by dewatering soils and conducting groundwater remediation. Proposals for disposing of liquid waste by land applications, including irrigation, must demonstrate that doses are maintained as low as is reasonably achievable and within the dose limits in 10 CFR 20.1301. Proposed land application activities must be described in sufficient detail to satisfy the NRC need to assess environmental impacts. This may require analysis to assess the chemical toxicity of radioactive and non-radioactive constituents. NUREG 1620, Appendix F at 1.4.

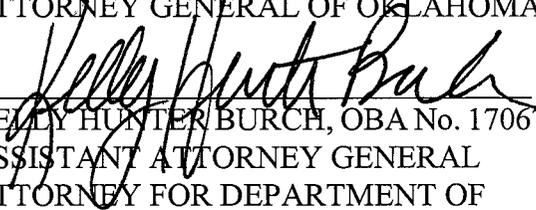
for a hearing within thirty days of the agency's publication in the Federal Register of a notice referring or relating to an application or the licensing action requested by an application. According to this rule and the provisions of 10 CFR § 2.710, the deadline for filing a Request for Hearing in this matter is May 15, 2003. As set forth in the Certificate of Service below, this Request for Hearing was transmitted by facsimile, and deposited in the United States mail on May 14, 2003, and was therefore filed on May 14, 2003. Pursuant to 10 CFR § 2.1203(b)(2), filing by facsimile is complete upon transmission, and filing by mail is complete as of the time of deposit in the mail.

Pursuant to 10 CFR § 2.1203(c), service of all pleadings, documents and correspondence relating to the Proceeding may be served upon Kelly Hunter Burch, Assistant Attorney General, Office of the Attorney General, 4545 N. Lincoln Boulevard, Suite 260, Oklahoma City, Oklahoma 73105.

WHEREFORE, premises considered, the Attorney General of the State of Oklahoma, W.A. Drew Edmondson, by and through the undersigned, Kelly Hunter Burch, Assistant Attorney General, on behalf of the State, hereby prays that this Request for Hearing be granted, and that the State be granted a hearing on all matters relating to the Proceeding and Sequoyah Fuels Corporation's request for an amendment approving the Reclamation Plan for Source Materials License NO. SUB-101.

Respectfully submitted,

W.A. DREW EDMONDSON
ATTORNEY GENERAL OF OKLAHOMA


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**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

In the Matter of)	
)	
SEQUOYAH FUELS CORPORATION,)	Docket No. 40-8027
)	
(Request to Amend Source Material)	
License No. SUB-1010))	May 14, 2003

NOTICE OF APPEARANCE

Notice is hereby given that the undersigned attorney enters an appearance in the above-captioned matter as a representative of the State of Oklahoma. In accordance with 10 C.F.R. § 2.713(b) (1999), the following information is provided:

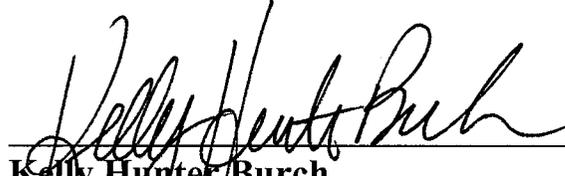
Name:	Kelly Hunter Burch
Address:	Office of Attorney General of Oklahoma 4545 N. Lincoln Boulevard, Suite 260 Oklahoma City, Oklahoma 73105-3498
Telephone Number:	(405) 521-4274
Fax Number:	(405) 528-1867
E-mail Address:	<u>kelly_burch@oag.state.ok.us</u>

Admissions: State of Oklahoma
Western District of Oklahoma
Northern District of Oklahoma

Name of Party: State of Oklahoma

Respectfully Submitted,

**OFFICE OF THE OKLAHOMA
ATTORNEY GENERAL**



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Dated: May 14, 2003

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on the 14th day of May, 2003, a true and correct copy of the Request for Hearing and Notice of Appearance was transmitted by facsimile, and by certified U.S. mail, return receipt requested, to the following:

Office of the Secretary
Rulemakings and Adjudications Staff
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Telefax: (301) 415-1101
VIA Certified U.S. Mail
No. 7002 2030 0000 8192 6222

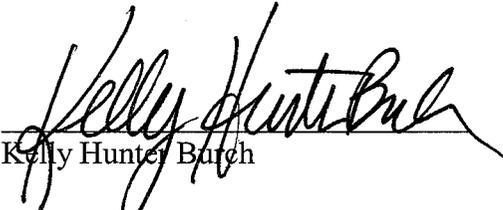
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