RAS 7231

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before Administrative Judges:

Alan S. Rosenthal, Presiding Officer
Richard F. Cole, Special Assistant

In the Matter of	)	
	)	Docket No. 40-7580-MLA-3
FANSTEEL, INC.,	)	
	)	ASLBP No. 04-816-01-MLA
(Request to Amend Source Materials	)	
License No. SMB-911)	)	January 30, 2004

STATE OF OKLAHOMA'S WRITTEN PRESENTATION

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The Attorney General of the State of Oklahoma, W.A. Drew Edmondson, by and through the undersigned, Sarah E. Penn, Assistant Attorney General, on behalf of the State of Oklahoma ("Oklahoma"), hereby submits its Written Presentation pursuant to 10 C.F.R. § 2.1233 on the matter of Fansteel, Inc.'s ("Fansteel") request to amend Source Material License No. SMB-911 at Fansteel's facility in Muskogee, Oklahoma (the "Fansteel Facility"). Herein, Oklahoma presents evidence to show why the decommissioning of the Fansteel Facility proposed in the Decommissioning Plan ("DP") is not in compliance with U.S. Nuclear Regulatory Commission ("NRC") statutes and regulations, and to detail the dangerous consequences that would result from any approval of the Decommissioning Plan and the resulting amendment of the Source Material License No. SMB-911.

I. BACKGROUND

A. FACTUAL HISTORY

The Fansteel Facility is located on 110 acres of land located directly on the western bank of the Arkansas River (Webbers Falls Reservoir) in eastern Oklahoma near the City of Muskogee. It is bounded on the west by State Highway 165 (a/k/a the Muskogee Turnpike) and on the south by U.S. Highway 62. From 1958 until 1989, the Fansteel Facility was a rare metal extraction operation, producing tantalum and columbium metals from raw and beneficiated ores, and tin slag feedstock. Earth Sciences Consultants, Inc., Remediation Assessment, Fansteel, Inc. - Muskogee, Oklahoma 1-2 (1993). The raw materials used for tantalum and columbium production contained uranium and thorium as naturally occurring trace constituents in such concentrations that Fansteel was required to obtain an NRC license. Id. The Fansteel Facility was licensed by NRC in 1967 to process ore concentrates and tin slags in the production of refined tantalum and niobium products. U.S. Nuclear Regulatory Commission, Environmental Assessment-License Amendment for Material License No. SMB-911, 1-1 (December 1997). Processing operations at the Fansteel Facility substantially ceased in December of 1989. Id.

As a result of operations and various accidents and releases, the Fansteel Facility, including its soils, groundwater, and surface waters have been and continue to be contaminated by uranium, thorium, ammonia, arsenic, chromium, metals, cadmium, ammonia, methyl isobutyl ketone (MIBK), and fluoride. Earth Sciences Consultants,

Inc., Remediation Assessment, Fansteel, Inc. - Muskogee, Oklahoma 1-2 (1993).

B. PROCEDURAL HISTORY

On July 6, 1998, Fansteel submitted its proposed Decommissioning Plan for the Fansteel Facility, therein requesting an amendment to Source Materials License SMB-911 to decommission the Fansteel Facility. Fansteel thereafter supplemented the Proposed Decommissioning Plan on December 4, 1998. On September 14, 1999, NRC caused to be published in the Federal Register its Notice of Consideration of an Amendment Request for the Fansteel Facility in Muskogee, Oklahoma and Opportunity for a Hearing (the "Notice"), relating to the Restricted Release Decommissioning Plan. In response, on October 14, 1999, the Oklahoma Attorney General filed a Request for Hearing Pursuant to 10 C.F.R. § 2.1205. Fansteel filed its Response to the Request for Hearing on October 29, 1999, and NRC Staff filed its response on November 5, 1999.

In a Memorandum and Order, dated December 29, 1999, the Presiding Officer Granted the Oklahoma Attorney General's Request for Hearing based on the finding that Oklahoma had the requisite standing to participate as a party and that Oklahoma specified areas of concern germane to the Proceeding.

On January 13, 2000 Fansteel, Inc's appealed from the Presiding Officer's Decision to Grant a Hearing to Oklahoma. On February 2, 2000, NRC Staff responded to Fansteel's appeal to the Presiding Officer's decision, stating that Oklahoma was properly granted a hearing, as it successfully demonstrated both standing and injury-in-fact, as well as areas of concern germane to the proceeding. Oklahoma filed its Counter-Statement in

Opposition to Fansteel Inc.'s Appeal on February 2, 2000.

On May 9, 2000 Fansteel, Inc. requested that the NRC staff discontinue review of Fansteel's Restricted Release Decommissioning Plan and on July 25, 2000, the NRC staff agreed to discontinue review of Docket No. 40-7580-MLA, ASLBP No. 00-772-01-MLA. Pursuant to the agreement of NRC staff to discontinue review of the Restricted Release Decommissioning Plan, Fansteel, Inc., Oklahoma and the NRC staff filed a joint motion to dismiss on January 2, 2001. On January 31, 2001, the Presiding Officer determined Fansteel Inc.'s appeal moot and accordingly, dismissed the case.

On January 14, 2003, Fansteel submitted a new DP to terminate the License No. SMB-911 for unrestricted use in accordance with 10 C.F.R.§20.1402. On January 15, 2003 Fansteel, Inc., filed for Chapter 11 bankruptcy protection.

On April 28, 2003 NRC staff member Daniel M. Gillen, (Gillen) Chief, Decommissioning Branch, Division of Waste Management sent a letter to Gary Tessitore, (Tessitore) Chief Executive Officer, Fansteel, Inc. indicating the Results of Preliminary Review of Fansteel's Decommissioning Plan dated January 2003. The letter stated that NRC staff had concluded that the DP did not contain sufficient information to conduct a detailed review at this time, and further added that many sections, chapters were conceptual only and that the radiological status of the site was incomplete, nor did the DP demonstrate how the estimated cost of remediation was reduced to less than half of the previous estimate of Fansteel's bankruptcy filing.

On May 8, 2003 Tessitore sent a letter to Gillen which stated it was a follow-up

to the April 28, 2003 letter, as well as the discussions and meeting held between the NRC and Fansteel regarding the licensee's bankruptcy. This letter outlined, in one page, a four-phased approach to decommissioning the Fansteel Facility, Muskogee site by a new entity MRI (a wholly-owned subsidiary of Reorganized Fansteel). On May 9, 2003, Gillen responded to Tessitore's letter of May 8, 2003, stating NRC staff had now reviewed Fansteel's one page submittal of May 8, 2003 and concluded that Fansteel had now submitted sufficient information to proceed with the detailed technical review of the DP.

On May 15, 2003, Oklahoma received the May 9, 2003 letter indicating acceptance of the Fansteel DP for Technical Review.

On June 16, 2003, the State filed a Request for Hearing in connection with Fansteel's January 14, 2003, DP. Thereafter, Gary Tessitore, CEO of Fansteel, indicated the withdrawal of Fansteel's DP due to NRC Staff's ("Staff") suspension of review in Fansteel's letter of June 26, 2003. The reasons for Staff's suspension of review are stated in a July 8, 2003, letter to Tessitore.

On July 9, 2003, a Presiding Officer was designated to rule on, inter alia, petitions for leave to intervene and/or requests for hearing in this proceeding. Also on July 9, the Presiding Officer issued an Order directing the State of Oklahoma to show cause, in light of Fansteel's withdrawal of its DP, why this proceeding should not be dismissed.

On July 15, 2003, Fansteel filed a Notification to request the Presiding Officer to suspend the show cause schedule to allow Fansteel until July 25, 2003, to decide whether it would resubmit its DP for NRC consideration. The State objected on the same day to

Fansteel's request for abeyance. Staff filed a response on July 16, 2003, stating it did not object to the request for abeyance.

On July 16, 2003, the Presiding Officer denied Fansteel's request for abeyance indicating that the schedule established in the Presiding Officer's July 9, 2003, Order to Show Cause would remain in effect. On July 17, 2003 the State filed its Objection and Show of Harm to Fansteel Inc.'s Withdrawal of Decommissioning Plan. On July 24 and 25, 2003, Fansteel and Staff filed a Response. Also, on July 24, 2003, Fansteel submitted a request for license amendment to approve the site DP submitted on January 14, 2003, as amended by letter dated May 8, 2003. In addition to Fansteel' s NRC filing, on July 24, 2003, Fansteel filed its Re-Organization Plan and Disclosure Statement with the United States Bankruptcy Court in the District of Delaware. The State filed a Motion for Leave to Reply based on the re-submission of the DP and its supplements and the filings in the Bankruptcy Court. Leave to file a reply was granted by the Presiding Officer on July 31, 2003. The State filed its Reply on August 7, 2003.

On August 11, 2003, NRC caused to be published in the Federal Register its Notice of Consideration of an Amendment Request for the Fansteel Facility in Muskogee, Oklahoma and Opportunity for a Hearing (the "Notice"). On September 10, 2003, the State filed its Request for Hearing. Fansteel and Staff filed responses to the State's Request. The State responded to Staff and Fansteel's Responses on November 3, 2003. Later that day, the State's Request for Hearing was granted by the Presiding Officer.

On November 7, 2003, the Staff published in the Federal Register a "Notice of

Availability of Environmental Assessment and Finding of No Significant Impact" ("FONSI") for License Amendment for Fansteel, Inc. – Muskogee, Oklahoma License No. SMB-911 ("EA Notice")68 Fed. Reg. 63134 (2003). On December 4, 2003, the Staff approved Fansteel's request for a license amendment authorizing decommissioning of the Muskogee site. Letter to G. Tessitore from D. Gillen, December 4, 2003 (ADAMS, Accession No. ML033240018) On December 8, 2003, Oklahoma filed its Objection to the Issuance of the FONSI. On December 18, 2003, NRC responded to the State's Objection, based on the argument that the issues were simple and should have been responded to in a more timely fashion, Fansteel also responded to the Oklahoma's Objection. The Presiding Officer granted Oklahoma the opportunity to respond and, Oklahoma did so on January 8, 2004. The Presiding Officer issued an order dismissing Oklahoma's objection to the issuance of the FONSI, however, it agreed that certain concerns should be addressed in Oklahoma's Written Presentation.

C. ARGUMENT

Oklahoma has significant property, financial, and other interests, such as the air, land, waters, environment, natural resources, wildlife, and citizens of Oklahoma that will be affected by the results of this Proceeding. Oklahoma seeks to protect these interests through the above-captioned adjudication.

Oklahoma has a duty to protect the general welfare of its citizens, and therefore an interest in protecting the health, safety, and welfare of its citizens, many of whom live, work, travel, or recreate at or near the Fansteel Facility. As sovereign, Oklahoma is

parens patriae, i.e., guardian and trustee for all of its citizens, and may act to prevent or repair harm to its quasi-sovereign interests. *Hawaii v. Standard Oil Co. of California*, 405 U.S. 251, 258 (1972). Further, Oklahoma has a quasi-sovereign interest in the physical and economic health and well-being of its citizens. *Alfred L. Snapp & Son v. Puerto Rico*, 458 U.S. 592, 600-607 (1982). Indeed, it is well-established that states may appear before the NRC to protect the interests of their citizens and their air, lands, waters, wildlife, and other natural resources. *In the Matter of International Uranium (USA) Corporation* (Receipt of Material from Tonawanda, New York), LBP-98-21, 48 N.R.C. 137, 145 (1998); *In the Matter of Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 N.R.C. 142, 169 (1998). This includes protecting the integrity of both groundwater and surface water, at, near, and downstream of the Fansteel Facility, for use by residents for irrigation and consumption by livestock and wildlife.

In addition to health, safety, and welfare, the interests protected by Oklahoma include the economic welfare of its citizens. It also includes protecting the area's tax base and Oklahoma's tax revenues, which may be adversely affected by decreased tourism and property values and loss of economic development caused by the continued contamination of the air, land, waters, wildlife, and natural resources of Oklahoma.

Oklahoma also has a proprietary interest in its air, lands, waters, wildlife, and other natural resources, which it has the right to protect. Oklahoma owns the waters in the Arkansas River. Okla. Stat. tit. 60, § 60, *Oklahoma Water Resources Board v. Central Oklahoma Master Conservancy District*, 464 P.2d 748 (Okla. 1968), which

borders the eastern boundary of the Fansteel Facility, and which are both hydrologically and geologically connected to groundwater beneath the Fansteel Facility. Moreover, all wildlife in the State of Oklahoma is property of the State. Okla. Stat. tit. 29, § 7-204. Oklahoma also operates and manages the Webbers Falls Unit of the McClellan-Kerr Wildlife Refuge, as well as the Cherokee Gruber Wildlife Refuge, each of which is located in close proximity to the Fansteel Facility, and leases certain agricultural rights and privileges in the of each wildlife refuge to third parties. Lastly, Oklahoma owns, operates, and maintains certain roads and thoroughfares in close proximity to the Fansteel Facility, namely State Highway 165, which runs adjacent to the Fansteel Facility. Oklahoma, and its political subdivisions, derive revenue from income taxes, sales taxes, and ad valorem (i.e., property) taxes.

As described in more detail below, the health and safety of Oklahoma's citizens, its environment, and its revenues will be irrevocably compromised by allowing continued contamination of the soil and groundwater around the Fansteel Facility. The proposed DP can not assure with any degree of confidence that the site will be properly remediated to the appropriate levels required by 10 C.F.R.§20.1402 because the DP is based on incomplete, outdated and inaccurate information. As a result the full extent of the contamination at the site has not been ascertained and cannot therefore be fully addressed. Fansteel has also failed to conduct the proper analysis to determine the appropriate dose assessment to be utilized at the site. As a result, the proper clean up levels will not be achieved thereby injuring the health, safety, and welfare of Oklahoma's citizens who rely

upon waters in the Arkansas River for drinking, irrigation, and livestock uses, injuring Oklahoma's natural resources, including its air, land, waters, and wildlife. In addition, the NRC's grant of Fansteel's request for waiver from the financial assurance mechanisms as required by 10 C.F.R.§ 40.36 further places in jeopardy any guarantee that the site will be properly remediated. Ultimately, an approval of the DP as currently written will assure continued contamination of Oklahoma's ground and water resources and continue to endanger the health and safety of Oklahoma's citizens.

I. SITE CHARACTERIZATION ISSUES

a. The Decommissioning Plan is based on a Site Characterization which is Incomplete and Should Therefor be Rejected because it Fails to Properly Address All Contamination at the Fansteel Site.

40 CFR 42(g)(1) mandates the submittal of a DP if a DP is required by license condition. The Fansteel license mandates the submittal of a DP. The proposed DP for the site must include "a description of the conditions of the site or separate building or outdoor area sufficient to evaluate the accuracy of the plan". NUREG-1757, Vol. 2 translates this regulatory requirement into guidance for licensees as they conduct their site characterization survey and for the NRC staff to evaluate the adequacy of that characterization survey as a basis for the approach proposed by the licensee to decommission the site.

The guidance defines Characterization Survey as "a type of survey that includes facility or site sampling, monitoring, and analysis activities to determine the extent and nature of residual radioactivity. Characterization surveys provide the basis for acquiring

necessary technical information to develop, analyze, and select appropriate cleanup techniques.[glossary, pp xxiv].The characterization survey process and the NRC protocols for reviewing the survey results are found in NUREG-1757, Vol. 2, Chapter 4, pp 4-1 through 4-18. The characterization survey is required to determine the "extent and magnitude of the residual radioactivity" on the site. It should be in "sufficient detail to provide data for the planning of the remediation effort, including remediation techniques, schedules, costs, and waste volumes and necessary health and safety considerations during remediation", p 4-8. Other objectives for the Characterization survey include "developing input to pathway analysis/dose or risk assessment models for determining site-specific [Derived Concentration Goal Limits]", "estimating the occupational and public health and safety impacts during decommissioning" and "complying with requirements of other applicable regulations"p 4-9.

The NRC staff reviews the characterization data "to verify that the licensee determined the radiological condition of the property well enough to permit planning for a remediation that will be effective and will not endanger remediation workers, to demonstrate that it is unlikely that significant quantities of residual radioactivity have gone undetected, and to provide sufficient information for designing the [Final Status Survey]" p 4-9. The information required to be submitted in the DP is outlined in the guidance at p4-10 and should include "a description and justification of the survey measurements for impacted media (i.e., building surfaces, building volumetric, surface soils, subsurface soils, surface water, groundwater, sediments, as appropriate) p 4-10. The

license is required to describe the field instruments used for the survey and the laboratory instruments used to analyze samples taken during the survey. The survey results should be shown on site maps and in chart formats. p 4-10.

NUREG 1727[1], (September 2000) requires that any DP must include the following, all of which were not included in Fansteel's DP submittal:

Executive Summary

The proposed initiation and completion dates of decommissioning;

Any post-remediation activities (such as groundwater monitoring) that the licensee proposed to undertake prior to requesting license termination; and

A statement that the licensee is requesting that its license be amended to incorporated the decommissioning plan.

Previous Decommissioning Activities

A summary of the results of the final radiological evaluation of the previously remediated area.

Contaminated Structures

The mode of contamination for each surface (i.e., whether the radioactive material is present only on the surface of the material of if it has penetrated the material);

The maximum and average radiation levels in mrem/hr in each room or work area

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[1] NUREG 1727, September 2000 was the original consolidated decommissioning plan guidance until September 2003 when it was replaced by the three volume guidance document, NUREG 1757, September 2003. NUREG 1727 is the guidance to which the DP was developed. It also served as the basis for the review and critique. Since 1757 is now the applicable guidance it should be cited as the definitive reference for any actions or activities regarding the DP from September 2003 forward.

Contaminated Systems and Equipment

The maximum and average radiation levels in mrem/hr at the surface of each piece of equipment;

A summary of the background levels used during scoping or characterization surveys.

Surface Soil Contamination

A list or description of all locations at the facility where surface soil contains residual radioactive material in excess of site background levels;

The maximum and average radiation levels in mrem/hr at each location.

Subsurface Soil Contamination

A list or description of all locations at the facility where subsurface soil contains residual radioactive material in excess of site background levels;

The depth of the subsurface soil contamination at each location.

ALARA Analysis

A quantitative cost benefit analysis;
A description of how costs were estimated; and
A demonstration that the doses to the average member of the critical group are ALARA.

Contaminated Structures

A description of the remediation techniques that will be employed in each room or area of the of the contaminated structure.

Contaminated Systems and Equipment

A summary of the remediation tasks planned for each system in the order in which they will occur including which activities will be conducted by licensee staff and which will be performed by a contractor;

A description of the techniques that will be employed to remediate each system in

the facility or site;

A description of the radiation protection methods and control procedures that will be employed while remediating each system;

A summary of the equipment will be removed or decontaminated and how the decontamination will be accomplished;

A summary of the procedures already authorized under the existing license and those for which approval is being requested in the decommissioning plan.

Soil

A description of the techniques that will be employed to remove or remediate surface and subsurface soil at the site;

A summary of the procedures already authorized under the existing license and those for which approval is being requested in the decommissioning plan.

Surface and Groundwater

A summary of the remediation tasks planned for ground and surface water in the order in which they will occur, including which activities will be conducted by licensee staff and which will be performed by a contractor;

A description of the remediation techniques that will be employed to remediate the ground or surface water;

A summary of the procedures already authorized under the existing license and those for which approval is being requested in the decommissioning plan.

Schedules

A statement acknowledging that the dates in the schedule are contingent on NRC approval of the decommissioning plan;

A statement acknowledging that circumstances can change during decommissioning, and, if the licensee determines that the decommissioning cannot be completed as outlined in the schedule, the licensee or responsible party will provide an updated schedule to NRC.

Decommissioning Management Positions and Qualifications

The minimum qualifications for each of the positions described above, and the qualifications of the individuals currently occupying the positions;

A description of all decommissioning and safety committees.

Training

A description of the radiation safety training that the licensee will provide to each employee;

A description of any daily worker "jobside" or "tailgate" training that will be provided a the beginning of each workday or job task to familiarize workers with job-specific procedures or safety requirements;

A description of the documentation that will be maintained to demonstrate that training commitments are being met.

Contractor Support

A summary of decommissioning tasks that will be performed by contractors;

A description of the management interfaces that will be in place between the licensee or responsible party's management and on-site supervisors and contractor management and on-site supervisors;

A description of the oversight responsibilities and authority that the licensee or responsible party will exercise over contractor personnel;

A description of the training that will be provided to contractor personnel by the licensee or responsible party and the training that will b e provided by the contractor;

A commitment that the contractor will comply with all radiation safety and license requirements at the facility

Air Sampling Program

A description which demonstrates that the air sampling program is representative of the workers breathing zones;

A description of the criteria which demonstrates that air samplers with appropriate sensitivities will be used; and that samples will be collected at appropriate frequencies;

A description of the conditions under which air monitors will be used;

A description of the criteria used to determine the frequency of calibration of the flow meters on the air samplers;

A description of the action levels for air sampling results;

A description of how minimum detectable activities (MDA) for each specific radionuclide that may be collected in air samples are determined.

Respiratory Protection Program

A description of the medical screening and fit testing required before workers will use any respirator that is assigned a protection factor;

A description of the written procedures maintained to address all the elements of the respiratory protection program;

A description of the use, maintenance, and storage of respiratory protection devices;

A description of the respiratory equipment users training program;

A description of the considerations made when selecting respiratory protection equipment.

Internal Exposure Determination
External Exposure Determination
Summation of Internal and External Exposures
Contamination Control Program
Instrumentation Program
Nuclear Criticality Safety
Health Physics Audits, Inspections and Record-Keeping Program

For these seven areas Fansteel just gave reference documents and did not provide the detail requested.

Effluent Monitoring Program

A demonstration that samples will be representative of actual releases;

A summary of the sample collection and analysis procedures;

A summary of the sample collection frequencies;

A description of the environmental monitoring recording and reporting procedures; and

A description of the quality assurance program to be established and implemented for the effluent monitoring program.

Effluent Control Program

A description of the controls that will be used to minimize releases of radioactive material to the environment;

A summary of the action levels and description of the actions to be taken should a limit be exceeded;

A description of the leak detection systems for ponds, lagoons, and tanks and;

A summary of the estimates of doses to the public from effluents and a description of the method used to estimate public dose.

Solid Radwaste
Liquid Radwaste
Mixed Waste

For these areas, no information was included – only a statement of what would be

included was given.

Organization

A description of the duties and responsibilities of each unit within the organization and how delegation of responsibilities is managed within the decommissioning program;

A description of how work performance is evaluated;

A description of the authority of each unit within the Quality Assurance ("QA") program;

An organizational chart of the QA program organization.

Quality Assurance Program

All items not included – just a statement of what will be included.

Document Control

A summary of the types of QA documents that are included in the program;

A description of how the licensee or responsible party develops, issues, revises and retires QA documents

Control of Measuring and Test Equipment

A summary of the test and measurement equipment used in the program;

Description of how and at what frequency the equipment will be calibrated;

A description of the daily calibration checks that will be performed on each piece of test or measurement equipment;

A description of the documentation that will be maintained to demonstrate that only properly calibrated and maintained equipment was used during the decommissioning.

Corrective Action

A description of the corrective action procedures for the facility, including a description of how the corrective action is determined to be adequate;

A description of the documentation maintained for each corrective action and any follow-up activities by the QA organization after the corrective action is implemented;

A description of the manner in which the QA records will be managed;

A description of the responsibilities of the QA organization;

A description of the QA records storage facility.

Audits and Surveillances

A description of the audit program;

A description of the records and documentation generated during the audits and the manner in which the documents are managed;

A description of all follow-up activities associated with audits or surveillances;

A description of the trending/tracking that will be performed on the results of audits and surveillances.

Characterization Surveys

A description of the laboratory instruments and methods that were used for measuring concentrations and the sensitivities of those instruments and methods;

Justification for considering areas to be non-impacted;

A discussion of why the licensee considers the characterization survey to be adequate to demonstrate that it is unlikely that significant quantities of residual radioactivity have gone undetected.

Site Maintenance and Financial Assurance
Obtaining Public Advice

Neither of these are included in DP.

The following are findings by the NRC staff that the DP as submitted does not comply with 10 C.F.R.§40.42 and does not contain the detail required by NUREG 1757 and NUREG 1727:

In Chapter 3:

3.1 The values for the hydrological parameters are stated but there is no mention of

the numerical techniques used to obtain those parameters. According to NRC staff, a discussion of the numerical techniques should be provided.

3.2 The potential for the vertical migration of radiological material to the bedrock aquifer is not discussed. According to NRC staff, Fansteel should provide the additional information or explain why it is not necessary.

3.3 There is not sufficient data to support the potentiometric contours of the bedrock aquifer in Figure 3-8. A detailed description of vertical migration should be provided in order to demonstrate that migration of isotopes of interest are not reasonably expected to reach this aquifer.

3.4 The values for distribution coefficients are given in the RESRAD output provided in Chapter 5, however no basis is given for the chosen values. These parameters may be important if the groundwater pathway is applicable.

4.3 There are insufficient data surrounding the ponds to characterize possible leakage. These areas should be characterized in order to properly assess the necessary amount of remediation to the site.

4.4 There are no data for process equipment or piping, either above or below grade. These areas and components should be characterized in order to properly assess the necessary amount of remediation to the site.

4.5 There are no data under the building floors or around the footings. This is important and should be characterized because contamination was found in these types of areas in other parts of the facility, e.g. NW property and must be done in

order to properly assess the necessary amount of remediation to the site.

4.6 The depth of penetration of contamination into structures is not defined. The depth of penetration affects the method of removal and total radioactive waste volume therefore must be determined in order to properly assess the necessary amount of remediation to the site.

4.7 The historic site assessment does not support the classification of areas, especially those identified as non impacted. Additional information, including characterization, as more completely described in proposition 1, should be provided to support the classification.

4.8 In section 2.1 of the November 1993 report states that "radiological analyses were secured from [three] depth intervals...0'-6" [at the saturation] zone and an intermediate interval..." However, **less than 10 percent** of the data in the DP have samples at more than one depth in a location, and **only one** has all three analyses. The distribution of contamination at depth throughout the site must be well defined in order to properly assess the necessary amount of remediation to the site.

4.9 The number of borings is not consistent in the report. Section 3.5.2 states there are 96 borings and section 4.3.2 states there are 92 while Table 4.1 has only 81 locations. The exact number of sampling locations should be ascertained and provided if a The basis for converting cpm to p/Ci/g is not presented and should be if a proper analysis is to be conducted.

4.11 Data from only two ground water sampling events is presented. This is

insufficient to determine the extent of the contamination. Also, in the1993 Remediation Assessment Report other contaminants such as chromium, arsenic and fluoride are shown to be present yet the Decommissioning Plan only addresses radiological contamination. Remediation for these contaminates needs to be addressed as well.

4.12 The elevation and location data for bore holes reported on Figure4-11 is different from the data on Drawing OMF-GRNDS-011(11/25/02). One discrepancy is that the reported low points on the OMF are higher than the surface topography shown, e.g. Pond 3 low point is listed as 531.3', and the topographic isopleth for the berm is 530'. Additionally, the elevations of the wells are approximately six feet higher on the OMF than that reported in the bore logs. Also, the locations of wells and topography is somewhat different between the two drawings. For example, on Figure 4-11, MW71S is on the 534' isopleth, and south of the south berm of Pond3,; on the OMF, the well is inside(less than) the 530' isopleth and north of the Pond 3 south berm. This raises questions on what values were used to calculate waste volume. These differences must be resolved and a consistent data set provided in order for an accurate assessment of the Decommissioning Plan.

Chapter 8

8.2 The remediation techniques for the several types of contamination are not specified: "Specific remediation techniques **will be developed**... (§8.1.2, 8.2.2, etc.) indicating that the Decommissioning Plan is incomplete and more

information must be submitted in order to conduct a proper review.

8.3 The depth of excavation in Ponds 2 and 3 as stated in §8.3.2.2 is different from that shown in Figure 8.1 by about 10 feet. This difference affects the volume calculations and thereby the amount of contamination to be remediated.

8.4 It is not clear whether the soils volumes include that under Ponds 2 and 3, or just adjacent to them. Again, this must be determined because it affects the total amount of property to be remediated.

8.5 The method and configuration for gamma scanning material to determine compliance with the release criteria are not specified. This should be defined in order to make a proper assessment of the site contamination.

8.6 The information submitted in Chapter 8 and Chapter 4 are not sufficient to verify the volume that will be disposed of at other licensed sites. This lack of information affects the ability to assess the extent of contamination as well as the costs of the Decommissioning Plan.

Chapter 9

9.1 Section 7.2 states that remediation work may not be performed by contractors, but §9.2.4 list tasks and activities to be performed by contractors. This just one more example of the inconsistencies contained within the Decommissioning Plan.

9.2 If indeed there are to be contractors, then information on specific contractors or work division between Fansteel and its contractors should be provided.

Chapter 10

10.1 Section 10.0 states "The current site RHASP... **will be revised**...to include decommissioning activities..." Again, information that is to be revised is inaccurate and insufficient to begin with and should not be utilized to make an accurate assessment of the extent of the site's contamination.

10.2 The selection and use of surrogates should be discussed in detail rather than in the Decommissioning Plan's cursory fashion.

10.3 Section 10.7 states ' The instrumentation program **will include**.." Yet again the information provided is incomplete and does not allow for a proper review of the Decommissioning Plan.

Chapter 11

11.1 Section 11.0 states "the current site EMP ...**will be revised to include** decommissioning activities..." If information provided is to be revised, it can not be be accurate as submitted.

11.2 There is no basis presented for using "recent sampling events", that are not defined, as a baseline for effluent releases. The justifications for the baselines should be included in the information provided. Also, any changes to a re-issued NPDES permit should be identified in order to determine the proper levels of contaminants.

Chapter 12

12..1 The radioactive "...solid waste management plan **will include** the following...." This plan has not yet been developed because of the status of the site

characterization, presumably its incomplete status, and both must be done in order to properly review the Decommissioning Plan.

Chapter 13

13.1 This chapter states the existing plan **will be revised** to address a variety of Quality Assurance issues related to decommissioning. These revisions should be made and a revised plan submitted because without Quality Assurance in the sampling methods the entire remediation effort must be called into question.

Chapter 14

14.1 Another reference to the incomplete site characterization surveys and its affect on the classification of areas on the site is made by the NRC staff.

14.2 Section 14.4 states " an FSSP **will be prepared** ..." The balance of Chapter 14 reiterates the MARSSIM theory, but provided no specific information. According to NRC staff, a comprehensive, site-specific plan should be submitted.

Chapter 15

15.3 The equation in Section 15.1.2(P15-3) does not properly compute the volume of the truncated pyramid used to approximate the ponds. This of course, does not allow for an accurate review of the DP.

15.4 There is no information on the shape of Ponds 1,2 or 4. The drawings(e.g.) Figure 4.1) show an irregular shape for Pond 2.There is no contingency in the volume calculations to account for the potential changes in the estimated volume of Pond 2. Page 15-4 states the slope for ponds 5-9 is between 1.5-2. The correct volumes

of all ponds, with contingencies should be provided.

15.5 Fansteel must demonstrate that IUC is authorized to accept the proposed shipments.

As this voluminous list demonstrates, the DP is fraught with inconsistent, inaccurate and insufficient data. It is inconceivable that a site of this size can be accurately assessed using such gross misinformation. If the DP is approved then Oklahoma's land, water, wildlife and citizenry are jeopardized because there will be no certainty that the standards of 10C.F.R§20. Part 40 NUREG 1727 and NUREG 1757 will be met. proper assessment of the necessary remediation is to be performed.

Additionally, the site characterization for the Fansteel property is embodied in the Remediation Assessment report prepared in 1993 by Earth Sciences Consultants, Inc. This report details the results of a soil and groundwater contamination investigation involving 67 soil borings, 25 groundwater monitoring wells, 13 test pits, 25 pond residue samples, seven surface water, and six sediment samples. See Remediation Assessment Fansteel, Inc. Muskogee, Oklahoma, December 1993. The Remediation Assessment report has the following shortcomings:

i. The report does not include the rationale underlying the selection of the boring, groundwater well, test pit, and other sample locations.

ii. The report does not include a discussion of why the licensee considers the characterization survey to be adequate to demonstrate that it is unlikely that significant quantities of radioactivity have gone undetected, as

stipulated in the applicable NRC guidance, see U.S. Nuclear Regulatory Commission, Consolidated NMSS Decommissioning Guidance, NUREG-1757, Vol. 1, Rev. 1, September 2003, pg.4-10.

Given the shortcomings noted above, it is not possible to verify the representativeness of sample results contained in the Remediation Assessment and the accuracy of corresponding estimates of required soil removal and groundwater treatment provided in the DP. Based on its review of the available information, the full nature and extent of contamination have not been sufficiently defined to develop a reliable DP for the site.

The Remediation Assessment report and the DP do not include a conceptual model of the site that discusses all contamination sources, exposure pathways, and human/ecological receptors. In particular, consideration of contaminated groundwater as an exposure pathway is conspicuously absent from the Remediation Assessment and DP. Accordingly, the completeness of the human exposure pathways developed qualitatively in the conceptual model and modeled deterministically using RESRAD in the subsequent dose assessment is questionable. This uncertainty, in turn, raises questions about the accuracy of the:

i. Designation of the industrial worker as the critical group for dose assessment

ii. Calculated annual dose to the critical group

iii. Clean-up standards and release criteria derived from dose assessment

iv. Volumes of contaminated soils to be removed and contaminated groundwater to be treated

v. Cost and schedule for the decommissioning activity.

Although extensive contamination of soils and groundwater contamination was identified during the investigation that led to the 1993 Remediation Assessment Report, it is not apparent from the available information that Fansteel subsequently reconciled the characterization data with the conceptual model discussed above to either:

i. Verify complete and accurate characterization of the site

ii. Formulate and implement requirements for further soil, groundwater, and other environmental media sampling needed to completely define the nature and lateral and horizontal extent of contamination.

The information contained in the Remediation Assessment and Decommissioning Plan (DP) clearly indicates that radioactive and hazardous constituents, including uranium, thorium, and methyl isobutyl ketone (MIBK) have been released to the Arkansas River. In spite of this fact, the Remediation Assessment does not include information that Fansteel sampled the surface water and sediment in downstream areas of the Arkansas River to identify adverse impacts to environmental quality in this receptor of site contamination. This apparent oversight by Fansteel is especially significant given that the river is the source for emergency public water supplies and is used for recreation, see Oklahoma's Water Quality Standards at Oklahoma Administrative Code 785:45, Appendix A.

Neither the Remediation Assessment nor the DP contain details on the design and operation of the groundwater interceptor trench that are sufficiently detailed to objectively evaluate its efficacy to prevent the migration of contaminated groundwater to potentiometrically downgradient areas of the site and the Arkansas River. This deficiency is especially significant because the proposed excavation plan (Figure 8-1 of the DP) indicates that no removal of contaminated soil, the principal source term for groundwater contamination at the site, is planned for the areas hydraulically downgradient from the interceptor trench, see the DP, figure 8-1, Excavation Plan.

Information contained in the DP expressly indicates that site geology has not been fully characterized. For example, on Page 3-10, it is stated that "the thickness of the water-bearing zone...was unquantifiable." Similarly, on Page 3-11, Fansteel admits that it has not fully characterized the bedrock formation but acknowledges the presence of fractures in the basal 30 feet of shale bedrock that are clay filled, indicating groundwater flow through these fractures, see DP, pages 3-10 and 3-11. In the aggregate, the geological/hydrogeological information contained in the Remediation Assessment and the DP fails to fully characterize the nature and extent of groundwater contamination at the site. It is thus reasonable to conclude that the existing data are insufficient to support the development and implementation of a credible DP.

b. The Decommissioning Plan is based on a Site Characterization which is inaccurate and Should Therefore be Rejected because it Fails to Properly Address All Contamination at the Fansteel Site.

Fansteel relies on data contained in the Remediation Assessment report as the primary source of site characterization data for development and implementation of the DP. This strategy is fundamentally flawed for the following reasons:

i. The current DP acknowledges that releases of radioactive and hazardous constituents to soils and groundwater have occurred and that these releases have impacted groundwater quality, see DP, pages 1-2, 2-8 and 2-16.

ii. The data in the DP also indicate that linear ground water flow velocity at the site averages between 1.77 E-4 and 2.74 E-4 cm/sec (178.6 and 274.2 ft/year). As shown in the following calculation, lateral migration of contamination in excess of 2,000 feet since the 1993 study period is thus possible.

(0.000177 cm/sec)x(1 in/2.54 cm)x(1 ft/12 in)x(3600 sec/hr)x(24 hr/day)x(365 day/yr) = 183.1 ft/yr

[(2003-1993)yr]x(183.1 ft/yr) = 1831 ft, ~0.35 miles

(0.000274 cm/sec)x((1 in/2.54 cm)x(1 ft/12 in)x(3600 sec/hr)x(24 hr/day)x(365 day/yr) = 283.5 ft/yr

[(2003-1993)yr]x(283.5 ft/yr) = 2835 ft, ~0.54 miles

iii. The results of groundwater sampling done in 2002 corroborate the above calculations by showing wide fluctuations in gross alpha and beta levels in many wells and order of magnitude increases in Well MW-67S.6

iv. Fansteel has not laterally expanded the network of groundwater

monitoring wells since 1993 to determine the horizontal extent of groundwater contamination, despite clear evidence that contamination is moving in the groundwater.

With a possible exceptions of one or two groundwater monitoring wells at the extreme northeastern extent of the network, comparison of Figures 2-1 and 2-2 in the DP suggests the following:

i. The monitoring network is incapable of characterizing groundwater downgradient from the interceptor trench.

ii. The existing network of groundwater monitoring wells cannot be used to validate the efficacy of the interceptor trench to prevent the migration of contamination.

Since there are no monitoring wells downgradiant of the interceptor trench based on the flow of the groundwater, it is impossible to determine the effect, if any, of the interceptor trench on groundwater contamination.

c. The Decommissioning Plan is based on a Site Characterization which does not accurately reflect current conditions at the facility and Should Therefore be Rejected because it Fails to Properly Address All Contamination at the Fansteel Site.

Neither the Remediation Assessment nor the DP describes the physical design and operation of the groundwater interceptor trench. It is thus not possible to evaluate the ability of the trench to collect all contaminated groundwater and prevent its downgradient migration. Given the absence of groundwater monitoring capabilities in the potentiometrically downgradient areas of the site, there remain significant uncertainties

about both the current extent of contamination and the continuing migration of radioactive and hazardous constituents.

The 1993 site characterization as contained in the DP fails to take into account changes or events that have occurred at the facility. Some of the changes or events that have occurred since the 1993 site characterization:

The 1993 characterization of buildings and equipment does not include effects of "reprocessing" activities that occurred through November 2001 nor does the 1993 characterization between the ponds and the process buildings include effects of "reprocessing" activities.

A tornado struck the site in 1999 damaging buildings Chemical "A", Chemical"C", R& D, Sintering, and Sodium Reduction as well as tearing the liners of Pond Nos. 3, 8 and 9 and ripping a stored soils cover. The damage to the Sodium Reduction Building allowed bagged Pond No. 5 material to fall out of the building and tear open. The bags were filled with moist, LLR material that contained an average of 21p/Ci/g uranium 235 and 6 pCi/g thorium-232 in 1993. Approximately 500 pounds of material were released to the ground surface allegedly within only a 10 foot diameter area. Without further analysis, it cannot be assumed that the release caused by this tornado was confined to a 10 foot diameter. To suggest that winds of 73-112 miles per hour would merely blow radioactive material 10 feet, pushing automobiles off the road

defies common sense[2].

The site characterization also does not account for the probable movement of soluble isotopes and their impact on the groundwater, possible groundwater changes caused by the placement of a mound of soil under an impermeable plastic tarp nor does it address the radiological contamination of the northwest property which the licensee originally believed to be uncontaminated. Plus potential sources of elevated subsurface contamination, e.g. B-36 and MW-71S Id at 2.2) are not discussed nor are Ponds1/1s-1N and 4. Id. at 2.3).

This argument is supported by the differences in gross alpha and Beta levels in the groundwater found between the 1993 and the 2002 sampling events. The current DP acknowledges that releases of radioactive and hazardous constituents to soils and groundwater have occurred and that these releases have impacted groundwater quality, see DP, pages 1-2, 2-8 and 2-16. The data in the DP also indicate that linear ground water flow velocity at the site averages between 1.77 E-4 and 2.74 E-4 cm/sec (178.6 and 274.2 ft/year). As shown in the following calculation, lateral migration of contamination in excess of 2,000 feet since the 1993 study period is thus possible.(0.000177 cm/sec)x(1 in/2.54 cm)x(1 ft/12 in)x(3600 sec/hr)x(24 hr/day)x(365 day/yr) = 183.1 ft/yr [(2003-1993)yr]x(183.1 ft/yr) = 1831 ft, ~0.35 miles (0.000274 cm/sec)x((1 in/2.54

[2]The Fujita Scale describes an F1 torando as being able to peel surfaces off roofs; mobile homes pushed off foundations or overturned; moving autos, pushing autos of the roads, attached garages may be destroyed. http:// www.tornadoproject.co/fscale/fscale.htm. June 1,2003

cm)x(1 ft/12 in)x(3600 sec/hr)x(24 hr/day)x(365 day/yr) = 283.5 ft/yr

[(2003-1993)yr]x(283.5 ft/yr) = 2835 ft, ~0.54 miles

The results of groundwater sampling done in 2002 corroborate the above calculations by showing wide fluctuations in gross alpha and beta levels in many wells and order of magnitude increases in Well MW-67S.6 Fansteel has not laterally expanded the network of groundwater monitoring wells since 1993 to determine the horizontal extent of groundwater contamination, despite clear evidence that contamination is moving in the groundwater. The DP is based upon the 1993 data and conditions at the site have changed since that initial sampling event. For this reason, the data on which the DP is based is fatally flawed.

Also, the DP at section 11.3.4, Estimated Public Dose, acknowledges possible effluents to the Arkansas River as a result of decommissioning activities. In this section the license indicates that no measurable doses to the public are anticipated due to the "dilution factor of the Arkansas River". There is no explanation for this conclusion and no accounting for possible impacts on fishermen and other users of the River immediately adjacent to the site.

It is suspect because the groundwater on site is dynamic as evidenced by the differences in sampling results between the 1993 sampling event and the 2002 sampling event. Additional factors making the data questionable would be: (a) lack of downgradient information regarding the effectiveness of the interceptor trench (b) the lack of in-river sampling data documenting stream impacts (c) data lacking regarding

possible contamination on the western part of the property where the manufacturing occurred. Licensee made a "process knowledge " conclusion without verification than no thorium or uranium remained and that other types of contamination, i.e., MIBK can be disregarded.

Construction of the french drain system to collect and process contaminated groundwater was constructed since the 1993 site characterization. The intent of the french drain system is to "collect alluval groundwater and minimize the potential for discharge of contaminated groundwater to the Arkansas River," see Section 2.3.5 of the DP. The groundwater is treated through the use of a series of wastewater impoundments and then discharged the water to the Arkansas River. There is nothing in the DP that indicates the depth of the french drain system; the effectiveness of the french drain system, including groundwater monitoring wells downgradiant of the groundwater flow; or whether the french drain system or impoundment system is returning the contaminants to the groundwater.

d. The NRC is Bound to Follow its Own Guidance in its Review of the Decommissioning Plan and in the Subsequent License Amendment

Fansteel applied to have its license terminated based on an unrestricted release of the site upon completion of decommissioning under the proposed DP. The DP was submitted for review in January 2003. Earth Sciences Consultants Inc., *Decommissioning Plan*, January 15, 2003. Under NRC guidance, the site is considered a Group 5 site because the licensee is seeking an unrestricted release for a site with onsite contamination

including groundwater contamination. See Consolidated NMSS Decommissioinng Guidance, NUREG-175, Vol. Rev. 1, September 2003, Pg 12-1. The guidance provides fairly comprehensive information regarding the content of a DP and the responsibilities of the licensee and Staff during decommissioning including the initial review process. The initial review includes an "acceptance review" during which time the NRC staff reviews the proposed DP to ensure that it addresses all of the criteria given in the guidance for a DP, in sufficient detail to for staff to perform a full technical review. Id.

The staff in fact performed the review and on April 28, 2003, rejected the DP due to missing information, lack of required detail and a number of other technical issues Letter from NRC, Gillen to Fansteel, Tessitore, April 28, 2003. Fansteel was given the option of resubmitting the DP with the required information, notifying NRC it intended to implement the existing DP or developing a different approach to decommissioning the site that meets the requirements of 10 CFR Part 20, Subpart E. Instead of resubmitting the DP with the required information, Fansteel initially withdrew the DP on June 26, 2003. This was followed on July 24, 2003 by a request for licensing action by Fansteel wherein Fansteel requested a transfer of its license to MRI, Inc., a subsidiary of Fansteel including an extension of time beyond the 24 months normally required to decommission a facility. The July 24, 2003 letter also included a proposal that the deficiencies noted by the NRC staff in proposed DP might be cured by including the requirement for producing the missing information as a license condition.

Under NRC guidance the DP would need to be resubmitted for review and when

all staff comments had been resolved the DP could be approved and the intial acceptance review step and most, significantly, the technical review process. By taking this action, NRC effectively sidestepped Oklahoma 's concerns over the DP and proceeded directly with a license amendment authorizing Fansteel to commence decommissioning based on the originally proposed DP, subject to the conditions of the amended license, See Fansteel License No. SMB-911, Amendments 11&12. As a result, instead of proceeding in a collaborative effort with the Staff and Fansteel, the NRC staff picked sides and forced this to an adversarial process. The Staff should be required to follow their guidance and review the proposed DP in the proper fashion.

As demonstrated above, the DP is replete with inaccurate, outdated and insufficient data which precluded NRC staff from conducting an adequate review, and which should have been rejected if they had properly followed their process. The DP will harm the citizens, air, land, waters, wildlife, and natural resources of Oklahoma, as well as the health, safety, and welfare of Oklahoma's citizens who rely on the Arkansas River, and the groundwater surrounding the Fansteel Facility for consumption, irrigation, or livestock uses because there is no reasonable way to determine if the site can be properly remediated for unrestricted release. The basis on which the DP was developed renders it fundamentally flawed and must be rejected and revised as set forth in the section regarding Relief Sought of this Written Presentation.

II. THE INDUSTRIAL USE SCENARIO IS NOT APPROPRIATE FOR THIS SITE

Fansteel has failed to demonstrate that they will meet the criteria for unrestricted release in 10 C.F.R. § 20.1402. Fansteel failed to consider all the sources, exposure routes and pathways in conducting its does modeling contrary to NUREG 1549. This scenario is not appropriate for the Fansteel site and fails to demonstrate that radiation dose from soil, groundwater, lagoons and surface water will meet the standards in 10 C.F.R. part 20 and will be as low as reasonably achievable. By utilizing the industrial use scenario, Fansteel avoids discussion about the groundwater contamination and its failure to address the contamination through a comprehensive groundwater treatment plan.

NUREG 1757 established the residential farmer scenario and industrial occupant scenario as the default scenarios when analyzing proper clean up and dose levels. When conducting the analysis to determine which default scenario to use, the facility must review:

1. Is it [groundwater] shallow enough that it can reasonably be pumped by the resident to irrigate a small farm and provide domestic drinking water?

2. Is it [groundwater] shallow enough to intercept and connect to a fish pond?

If the answer to both questions is "no", then the industrial occupant scenario may possibly be used. If either question is answered "yes," then the default residential farmer scenario should be used, See NUREG 1757.

According to the shallow groundwater contour map, contained at Figure 3-7 of the DP, finds the groundwater depth between 20 - 40 feet deep. According to Section 5.2.1 of NUREG 1757, the groundwater is shallow enough to irrigate a small farm and provide

drinking water:

> [w]ith regards to the first question, the resident would need to drill a well into a permanent aquifer that has water sufficient for his needs and then be able pump that water into his house and onto his crops. Under the assumption that the well drilling and pumping technology available to the resident is similar to what exists today, it would not be unreasonable for the farmer to drill a well to and pump from a depth of 400 feet, but this depth should be considered somewhat subjective. Specific local conditions should be considered when deciding how deep an aquifer a subsistence farmer would be able to use. A commercial farmer would be likely to drill much deeper than a subsistence farmer would. Therefore, the resident farmer irrigation and drinking water pathways should be

included. Additionally, since the irrigation and drinking water pathways should be included, then surface water should not be excluded, Section 5.2.1 of NUREG 1757.

The industrial use scenario is not appropriate for the Fansteel Facility because it condemns the site to an industrial use only. Although the Port of Muskogee may acquire portions of the property for industrial use, it is not inconceivable and is in fact reasonable to expect some recreational use of the property considering the location and topography of the site. This is a recreational area, across the river is a boat launching areas which is being discussed as use a marina and in the area there are numerous recreational lakes, including Fort Gibson and Lake Eufala. The area around the Fansteel Facility is home to a wide variety of flora, fauna and aquatic life. EARTH SCIENCES CONSULTANTS, INC. DECOMMISSIONING PLAN, FANSTEEL INC. -MUSKOGEE, OKLAHOMA3-21, 3-22. It is therefore not possible to preclude the potential use by sportsmen and outdoor enthusiasts who will take fish, game or natural plants from the area for food.

Agricultural use of the land occurs outside the City of Muskogee and is an

important component of the economy of area. Soybeans, hay, corn and sorghum are the primary crops grown. Muskogee County is among the state's top six soybean-producing counties. Dairy cattle, beef cattle, hogs and chickens are all raised in the area around the site. Most farms in the area are classified as livestock farms and dairy farms. The facility lies along the Arkansas River. According to Oklahoma Water Quality Standards, promulgated by the State of Oklahoma and approved by the United States Environmental Protection Agency, the Water Quality Standards for this segment of the Arkansas River are: Emergency Public Water Supply Beneficial Use and Primary Body Contact Recreational Beneficial Use, see Oklahoma Administrative Code (OAC) 785:45, Appendix A. Finally, according to the permit records of the Oklahoma Water Resources Board, there are two farmers using the waters of the Arkansas River for irrigation of their farms. See exhibit

Fansteel failed to consider all the sources, exposure routes and pathways in conducting its dose modeling contrary to NUREG 1757. The DP fails to demonstrate that radiation dose from soil, groundwater, lagoons and surface water will meet the standards in 10 C.F.R. Part 20 and will be as low as reasonably achievable. Since the groundwater may be used for drinking water pursuant to the analysis of NUREG 1757, Fansteel must therefore provide additional information regarding the dose effects of the alternate reasonable land use scenarios because the industrial occupant scenario is not appropriate for the Fansteel Facility.

III. The NRC Did Not Comply with the Requirements for Waiver of Financial Assurance Funding Mechanism

Fansteel's license authorizes the possession of more than 100 mCi of source material. Cite license condition and pursuant to 10 CFR 40.36(a) Fansteel must submit a decommissioning funding plan. The decommissioning funding plan must comply with the requirements described in paragraph (d) of 10 CFR 40.36 and 10 CFR Part 30 Appendix A.

10 CFR § 40.36(d) requires in pertinent part:

> "...and a description of the method of assuring funds for decommissioning from paragraph (e) of this section..." including means for adjusting cost estimates and associated funding levels periodically over the life of the facility....and a signed original of the financial instrument obtained to satisfy the requirements of paragraph (e) of this section."

In lieu of submitting the required financial assurance Fansteel instead requested an exemption from the financial assurance mechanisms described in 10 CFR § 40.36 (d) &(e) and 10 CFR Part 30 Appendix A. Instead, Fansteel, in order to avoid full compliance with its financial obligations to Oklahoma, filed bankruptcy. On July 24, 2003, Fansteel submitted to the NRC a letter stating that the facility could not emerge from bankruptcy if it must meet all the requirements of 10 CFR § 40.36(e) and requested waiver of the requirements. Fansteel supplied draft and preliminary documents (not

properly executed) to the NRC allegedly demonstrating financial assurance. On December 4, 2003, the NRC granted the waiver from all the requirements of 10 CFR § 40.36(e) based on these preliminary or draft documents. NRC though noted that Fansteel "may submit original signed versions of the revised drafts of the financial instruments as financial assurance" see 14.3.1.1 of the license. In fact, Oklahoma is unaware of whether an original copy of the Reorganization Plan or any of the properly completed "revised drafts" of the financial instruments has been submitted as required by 10 CFR § 40.36(d), assuming of course it complied with the other requirements of 40.36(e) or the required information described in Appendix G of NUREG 1556, Vol. 15.20.

The NRC, once it had been notified of the bankruptcy should have established a Bankruptcy Review Team (BRT). It is unclear whether the NRC established this team and whether they followed the procedures for review of a company in bankruptcy as required in Appendix H of NUREG 1556, Volume 15. Even if a BRT was established and the appropriate documents reviewed, NUREG 1556 does not endow the NRC with the ability to waive the financial assurance requirements. Therefore, the exemption should be revoked.

IV. The cost estimates utilized by Fansteel are based on undocumented and unreasonable assumptions and are not consistent with NRC cost estimation reference documents therefore the cost estimates should be rejected.

10 CFR § 40.36(d) requires each decommissioning funding plan to contain a cost estimate for decommissioning. NUREG 1727 requires that "the cost estimate is based on

documented and reasonable assumptions; and the unit cost factors used in the cost estimate are reasonable and consistent with NRC cost estimation reference documents," see, Section 15.1.1 of NUREG 1727.

The NRC commissioned an independent analysis of the costs to decommission the site. The basic difference between the two estimates is contained in the site characterization provided by both documents. Specifically, the disparity in cost estimates is based on the volume of soil that will require off-site disposal and the volume of soil and pond residue that is considered mixed waste rather than low level waste. As previously set forth in the site characterization section of this presentation, the information and data utilized to prepare the DP is inaccurate, incomplete and outdated. As a result, it is impossible to accurately determine the total volume of soil and the amount of mixed waste that exists. The DP also fails to address the generation of additional mixed waste because there no provision for monitoring for RCRA parameters previously shown to be onsite. The disposal of the combination of chemical hazardous waste and radiological waste is approximately three times higher than the individual disposal of hazardous waste or radiological waste because disposal of mixed waste is limited to one commercial site in the United States.

The cost estimate contained in the DP is not "consistent" with the "cost estimate reference document" conducted by NRC itself and is not based on documented and reasonable assumptions as required by NUREG 1727. Therefore, until the DP can comply with this "NRC cost estimate reference document," the DP cannot be viewed as meeting

the requirements of NUREG 1727 and must be rejected.

V. NRC Improperly Issued a FINDING OF NO SIGNIFICANT IMPACT

NRC did not consider the appropriate factors when making its decision

NEPA requires federal agencies to prepare a detailed statement of the environmental impact for "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. §4332(C). This is a recreational area, across the river is a boat launching area which is being discussed for use as a marina. Numerous recreational lakes, including Fort Gibson and Lake Eufala surround the area. During public tours, John Hunter and other facility staff have repeatedly emphasized the "natural character" of the facility, pointing out various fish and animals that have infiltrated the ponds. The area surrounding the Fansteel Facility is graced with natural scenic beauty, including the Arkansas River. Nearby wildlife refuges, such as the Robert S. Kerr Unit of the McClellan-Kerr Wildlife Refuge, and the Cherokee Gruber Wildlife Refuge are a testament to the special character of the areas immediately surrounding the Fansteel Facility. The area surrounding the Fansteel Facility is an important tourism asset, and is frequented by Oklahoma citizens and other persons for numerous recreational purposes. If the site is not immediately developed (or becomes undeveloped in the future), it is not possible to preclude the probability that sportsmen and outdoor enthusiasts will take fish, game, or natural plants from the area for food use. Although the Port of Muskogee is attempting to develop this area as an industrial park, the area is not solidly industrial. The EA does not consider the significant impacts and the use of the industrial scenario in the

DP. Because the DP is replete with inaccurate and insufficient data the NRC staff could not have conducted an adequate review. The implementation of a fatally flawed DP will have significant impact on the quality of the human environment. As a result, the implementation of the DP proposed by Fansteel will have significant impacts on the quality of human environment and therefore the FONSI should be rejected and an Environmental Impact Statement should be required.

The second relevant factor which was not appropriately considered by the NRC staff deals with the chemical contamination at the site. On page 2 the NRC Assessment says "In fulfilling its obligations under the National Environmental Policy Act (NEPA) the NRC must evaluate the environmental impacts associated with approval of the DP and subsequent termination ....Both radiological and non-radiological impacts must be considered." However no evaluation of non-radiological impacts was considered. In fact, Section 3.1.2 on page 3 states: "The 1993 characterization data demonstrates that the site has chemical contamination including ammonia, fluoride, and Methyl Isobutyl Ketaone (MIBK). The NRC does not have regulatory authority to address the known chemical contamination at the site." In fact, the NRC's lack of jurisdiction over chemical contaminants has been acknowledged by the Presiding Officer in this case. He states in the Memorandum and Order issued on November 3, 2003 in relevant part "... that it (chemical contaminants) is outside the bounds of the NRC's authority to address can scarcely be deemed of relevance in this adjudicatory proceeding." Memorandum & Order @ pg.9

The NRC should have consulted the State for guidance in the appropriate remediation of the non-radiological contaminants as well as the potential for the creation of mixed waste because of the significant for an increase in disposal costs as well as increased hazards. Additionally, Item 4.2 states "Fansteel will remediate existing contamination in the ground water." Per OAC 252:611-5-1(b) "Any person proposing a remediation project relating to ground water or required to undertake such a project by the DEQ is required to obtain prior approval by the DEQ of a site assessment plan and remediation plan." Again, the ODEQ was not consulted nor does Fansteel have the approval necessary to implement a groundwater remediation plan. The NRC's decision to issue a FONSI is on uninformed opinions and fails to consider relevant agency's expertise and therefore the FONSI should be rejected. NEPA "prohibits uninformed-rather than unwise-agency action."*Custer County Action Ass'n v. Garvey*, 256 F.3rd 1024, 1034. Further, as described in the DP, the industrial land use scenario is utilized yet the dose effects of alternate, reasonable land use scenarios were not evaluated nor considered. The NRC failed to determine the impact the non-radiological contamination and the subsequent creation of mixed waste by improper disposal would have on the ultimate remediation of the site. The NRC staff to allow for meaningful consultation with ODEQ regarding the possible cumulative impacts of the known chemical contaminants together with the radiological contamination on the dose to the critical receptors is reason for the FONSI to be rejected and EIS performed.

The NRC Improperly Pre-determined the Outcome of the Environmental

Assessment

The NRC predetermined the outcome of the EA as demonstrated by the correspondence April 28, 2003 and May 8, 2003 exchanged between Fansteel and the Staff in violation of 10 C.F.R. Part 51 and the Guidance in NUREG 1748. See letter from Gillen to Tessitore, April 28, 2003 and letter from Tessitore to Gillen, May 8, 2003.

The State will be filing a FOIA request upon the NRC to determine the full extent of collaboration with the Company in making this decision. The State requests leave to supplement its brief based upon the provided information.

RELIEF SOUGHT

1) Fansteel should be required to submit supplemental site characterization information which includes site sampling to account for events occurring after 1993, reconciliation between inconsistent data, additional data collection in order to ascertain the full extent of contamination and all analyses and information required to fully comply with NUREG 1727- NMSS Decommissioning Standard Review Plan Rev. 9, 09/15/00. This supplemental site characterization should be conducted and submitted for a complete and thorough technical review by the NRC. NRC should be required to follow its rules and guidance to ensure the site is properly remediated to the standards set forth in 10 C.F.R. Part 20.

2) A limited remediation assessment should be undertaken to identify the current total site soil and ponds contamination, since the initial site assessment did not cover the total site property used for operations, but was limited to areas around

only certain operations with greater potential for contamination. This assessment would show whether conditions have changed since 1993 as demonstrated in the 2002 groundwater analyses.

3) A groundwater remediation plan must be prepared and executed to determine the current groundwater contamination for radiological and chemical parameters to assess the site and understand contamination of groundwater leaving the site.

4) Using the above information prepare a DP that has the details, necessary plans, and defined clean-up criteria to protect the health of all future users of the site and surrounding land and water. This plan should include a complete multi-media monitoring plan to be implement during remediation.

5) The DP should be revised to ensure that all of the mechanisms are in place to ensure worker safety and the protection of the public prior to commencement of decommissioning.

6) The DP should be revised to reflect the use of the residential farmer scenario.

7) The cost estimates for the DP should be re-evaluated to account for the disposal of mixed waste and for compliance with the residential farmer scenario and the remediation of the groundwater pathways.

8) The waiver for financial assurance should be rescinded.

9) The NRC should be required to conduct the proper analysis of the financial assurance mechanisms pursuant to Appendix H of NUREG -1556, Volume 15. NRC should also be required to provide a copy of the analysis performed to

ensure proper adherence to the guidance.

10) NRC should be required to convene a Bankruptcy Review Team to ensure the proposed funding scheme complies with the funding requirements allowed by Appendix H of NUREG -1556, Volume 15.

11) Assuming the NRC performs its requisite obligations, Fansteel should be required to submit original, signed documents to demonstrate its financial assurance requirements.

12) The NRC should conduct an Environmental Assessment based on the supplemental site characterization to be submitted by Fansteel. The NRC should agree to fairly and impartially determine whether an Environmental Impact Statement should be issued based on the properly performed Environmental Assessment.

13) The State requests leave to supplement its brief based upon the provided information.

CONCLUSION

The State of Oklahoma has demonstrated, based on the arguments and evidence presented above that the DP of Fansteel, does not meet NRC requirements for unrestricted release and should have been rejected. This is most evident in the NRC letter to Fansteel, dated April 28, 2003 wherein staff idenitifies the deficiencies in the DP and no subsequent submission by Fansteel has remedied these deficiencies.

The State has demonstrated the fatal flaws in the site characterization on which

the DP is based. The State has also demonstrated the failure of Staff to follow its own rules, regulations and guidance thereby allowing the State's property and citizens to be placed in jeopardy in the event a faulty, and inadequate DP is allowed to proceed. The State has also shown that an Environmental Impact Statement should be conducted due to the Staff's improper behavior in pre-determining the outcome of the Environmental Assessment and its failure to consider all the necessary factors. For these reasons, the State should be granted the relief it is seeking in order to ensure the safety of its environment and its citizens.

Respectfully Submitted,

W.A. DREW EDMONDSON
ATTORNEY GENERAL OF OKLAHOMA

SARAH E. PENN
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OKLAHOMA WATER RESOURCES BOARD
*** AMENDED RIGHT TO APPROPRIATE STREAM WATER**

Stream System Arkansas River Number 2-4 County Muskogee
File Number 66-457 Priority Date July 26, 1966

THIS IS TO CERTIFY that the OKLAHOMA WATER RESOURCES BOARD has amended the original permit referenced above, in the following particulars as indicated below:

Name of Permit Holder Cary Grant
Address of Permit Holder Rt. 5, Box 566, Muskogee, OK 74401
*Acre-feet Authorized Per Calendar Year 180 a.f.
Purpose(s) Irrigation
Location of Diversion Arkansas River, S2 Sec. 30, NE4 Sec. 31 & S2 Sec. 25, 15N, 19E
Location of Use 387 acres, SW4 SEC. 30 & N2 Sec. 31, 15N, 20E & S2 Sec. 25 & S2 Sec. 30, 15N, 19E

The water right heretofore amended remains subject to the following terms, conditions and limitations:

1. The use of water under this amended water right shall not interfere with domestic uses or existing appropriative uses.

2. A WATER USE REPORT furnished by the Board must be filed within thirty (30) days of receipt. Willful failure to complete and return the report may be considered by the Board as nonuse of water under this permit.

3. The authorized amount of water is subject to forfeiture and must be beneficially used in a calendar year within any seven (7) continuous year period to retain the authorized amount.

4. Acceptance of this amended water right by applicant/permit holder shall be an acknowledgement and agreement that applicant/permit holder will comply with all the terms, conditions and limitations embodied herein and all applicable laws of the State of Oklahoma and Rules, Regulations and Modes of Procedure of the Board, as amended.

DATED this 14 day of November, 1990.

OKLAHOMA WATER RESOURCES BOARD

James R. Barnett, Executive Director

OKLAHOMA WATER RESOURCES BOARD

PERMIT TO APPROPRIATE STREAM WATER

Stream System Main stem from mouth of Canadian River to Keystone Dam Number 2-04 County Muskogee

Application No. 81-36 Date of Filing February 13, 1981 Permit No. P81-36

THIS IS TO CERTIFY that the OKLAHOMA WATER RESOURCES BOARD has held a public hearing on the Application of Richard Paul Sheffield ~~1445 E. Poplar~~ 3/25/13 ed. whose address is ~~Rt. 2, Box 409,~~ Ft. Gibson, OK 74434 for a Permit to appropriate ~~140~~ 120 acre-feet of water per calendar year, for the purpose of irrigating 70 acres of land NE¼ NW¼ & 5 acs. NW¼ SE¼ NW¼ Sec. 25, Twp. 15N, Rge. 19EIM & 25 acs. W½ SW¼ Sec. 19, Twp. 15N, Rge. 20EIM

Water to be diverted from Manard Bayou & Arkansas River, SW¼ SE¼ NW¼ Sec. 25, Twp. 15N, Rge. 19EIM & SW¼ SW¼ SW¼ & NW¼ SW¼ SW¼ & NE¼ SW¼ SW¼ & NE¼ NW¼ SW¼ Sec. 19, Twp. 15N, Rge. 20EIM

at a rate not to exceed 700 gallons per minute.

THE APPLICATION IS HEREBY APPROVED and the applicant is authorized to proceed with the construction of the project in compliance with the above described application, which is made a part hereof and subject to the following terms, conditions and limitations:

1. Providing prior rights and domestic uses downstream are not affected by this diversion of water.

2. Work on the project must be started by the 12th day of May 1983, and the applicant has until the 12th day of May 1988, to complete the project.

3. Upon completion of the project applicant must file with the Executive Director of the Oklahoma Water Resources Board a NOTICE OF COMPLETION OF PROJECT in the manner prescribed.

4. In order to keep this Permit in full force and effect and retain the PRIORITY DATE, a WATER USE REPORT must be filed each year on forms furnished by the Board.

5. Acceptance of this Permit by applicant shall be an acknowledgment and agreement that applicant will comply with all the terms, conditions and limitations embodied in this Permit.

DATED this 12th day of May 1981.

OKLAHOMA WATER RESOURCES BOARD

James R. Barnett, EXECUTIVE DIRECTOR

ENCLOSURES:
Application
Receipts
82 O.S. Supp. 1972
Completion of Project

Form 504-0778

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on the 30th day of January, 2004, a true and correct copy of the foregoing, State of Oklahoma's Written Presentation, was served upon the persons listed below by U.S. mail, first class, postage prepaid, and by electronic mail where indicated with a single asterisk. A copy was also sent by facsimile transmission to the Office of the Secretary.

Alan S. Rosenthal*
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Presiding Officer
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
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Washington, D.C. 20555-0001
E-mail: rsnthl@comcast.net

Richard F. Cole, Special Assistant
Administrative Judge
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Office of the Secretary*, **
Attn: Rulemaking & Adjudications Staff
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SARAH E. PENN

** Original and 3 copies

OFFICE OF ATTORNEY GENERAL
STATE OF OKLAHOMA

January 30, 2004

Via Facsimile and U.S. Mail First Class

Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attention: Rulemakings and Adjudications Staff

Re: In the Matter of Fansteel, Inc., State of Oklahoma's Written Presentation
U.S. Nuclear Regulatory Commission, Docket No. 40-7580-MLA-3

Sir or Madam:

Enclosed please find an original of the State of Oklahoma's Written Presentation and three conformed copies thereof, prepared for filing with the U.S. Nuclear Regulatory Commission in the referenced matter. Pursuant to 10 C.F.R. 2.708(f) (2002), only one Written Presentation is being transmitted by facsimile as the original and three conformed copies will be transmitted by certified U.S. mail.

Upon receipt, please return the remaining file-stamped copy of the enclosed to this office in the self-addressed, stamped envelope enclosed for that purpose.

Thank you in advance for your assistance in this matter. Should you have any questions, please do not hesitate to call.

Sincerely,

SARAH E. PENN
ASSISTANT ATTORNEY GENERAL

SEP/jb
Enclosures

4545 N. LINCOLN BLVD., SUITE 260, OKLAHOMA CITY, OK 73105-3498 (405) 521-4274 • FAX: (405) 528-1867