Westinghouse Electric Company
Nuclear Fuel
Columbia Fuel Site
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USA

U. S. Nuclear Regulatory Commission
Attn: Ms. Mary T. Adams, Senior Project Manager
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Your ref:
Our ref: LTR-RAC-06-55

June 28, 2006

SUBJECT: ADDITIONAL INFORMATION REQUESTED FOR ENVIRONMENTAL ASSESSMENT (TAC 31911)

As we discussed on Wednesday, June 21, 2006 during your site visit associated with the Environmental Assessment for the Columbia Fuel Fabrication Facility (CFFF) License Renewal, Westinghouse Electric Company (WEC) is formally transmitting the attached information we discussed during your visit.

If you have any questions, please contact me at (803) 647-3338.

Sincerely,

Nancy Blair Parr

Nancy Blair Parr
Manager, Licensing
Westinghouse Columbia Fuel Fabrication Facility

Docket 70-1151 License SNM-1107

1 Attachment

NEPA REVIEW INFORMATION
6/21/2006

Specific Questions

1. **Modifications to the Columbia Fuel Fabrication Facility (CFFF) since last license renewal**
    - BWR empty shipping container storage facility - no NRC license amendment required
    - Mobile external cylinder wash facility - no NRC license amendment required
    - SCE&G land sale (sub-station installation); detailed environmental report written by SCANA (Lee Newman in September 2003) – no NRC license amendment required
    - New Emergency Brigade Building – no NRC license amendment required
    - New Security Building at Plant Entrance – no NRC license amendment required
    - Jersey barriers around facility – no NRC license amendment required
    - Erbia Manufacturing Facility (no major plant dimensions expansion) – NRC license amendment was required

2. **Archeological surveys on-site**
    - Original Site Environmental Report 1975
    - Site & Structures ISA Summary – October 2004
    - Environmental Report Update - December 2004
    - During the recent SCE&G land sale and right of way issuance completed in 2005, an on-site historical cemetery was identified approximately 1000' southwest of the plant. The cemetery (Denley Cemetery from the historical Denley plantation) appears to have been operational in Richland County from approximately 1900-1940. In 2005, the area (approximately 180'x160') was fenced off, shrubs removed, and existing stones maintained. Approximately 85 sites were noted in the cemetery, and a listing of known decedents buried in the plot was identified. Information was obtained from Patrick McCawley at the South Carolina Department of Archives & History.
    - Westinghouse is not aware of any archeological or historical discoveries on-site. The Environmental Protection Guidelines & Checklist used in evaluating configuration management changes to the CFFF will be modified to incorporate provisions for protection or mitigation in the event of a future archeological or historical discovery on-site.

3. **Other activities on-site**
    - No licensed activities have been conducted on the property outside of the 60 acres where the main facilities are.

4. **Waste disposed on-site**
    - No waste buried on site
    - Temporary sea containers awaiting incineration

5. **Geologic impacts**
    - There are no signs of geologic impacts present on site (erosion, subsidence, landslides).

Topics Requiring Additional Information

6. **Annual radiological doses since last license renewal**

    Information needs to be gathered for a more formal response.

7. **Regional air quality description including information of National Ambient Air Quality Standards attainment status and Prevention of Significant Deterioration**

    Information needs to be gathered for a more formal response.

8. **Levels of Nonradiological Air Emmissions (National Ambient Air Quality Standards and any relevant Hazardous Air Pollutants)**

    Information needs to be gathered for a more formal response.

9. **Levels of radiological air emissions and relationship to regulatory limits**

    Information needs to be gathered for a more formal response.

10. **Clarification of liquid effluent processing, sampling locations and the relationship between radiological and nonradiological emission levels and regulatory limits**

    Westinghouse believes that this clarification was provided during the on-site tour of the waste treatment facility and the subsequent discussions at the CFFF. In addition, the following information was provided during the site visit.

Liquid Effluents

Radiological Waste Treatment

Process waste streams from the chemical processing area are discharged from the combined ADU conversion area filtration/quarantine tank system. Preliminary treatment of liquid waste for the removal of uranium is completed in the ADU conversion area by the controlled area waste quarantine tank system equipped with an on-line monitoring system. This on-line NaI well detector spectroscopy system alarms and diverts waste to additional quarantine tanks and filtration, if the uranium concentration exceeds 30 ppm uranium(equivalent to 7.2 E-05 uCi/ml). Liquid waste from this system is pumped to the external waste treatment facility for additional radiological and chemical treatment. This second treatment system assures that the uranium in the liquid effluent is removed to a nominal level of 0.5 ppm uranium (equivalent to 1.2 E-06 uCi/ml at a specific activity of 2.4 uCi/gU).

The external waste treatment facility further processes the liquid waste for removal of uranium to de minimus levels at the Waterglass Advanced Wastewater Treatment facility. This process involves treatment of the liquid effluent stream with water soluble sodium silicate and precipitation and removal the uranium as an insoluble product using the Artisan continuous rotary pressure filter where the cake like solids containing uranium are removed. The Waterglass process effluent is typically controlled to insure that the liquid effluent is less than 0.5 mg U /l. Liquid waste may be stored in large storage tanks. Following uranium removal the liquid effluent waste is transferred to 30,000 gallon storage holding tanks in preparation for ammonia removal and recovery at the ammonia distillation process. All liquid process wastes are further treated to assure removal of ammonium fluoride contaminants and compliance with the site EPA/SC-DHEC NPDES liquid effluent discharge permit.

A continuous proportional sample of the liquid released to Congaree River is collected and routinely analyzed to assure NPDES compliance. A 30 day composite of this sample is analyzed for Gross Alpha, Gross Beta, and Isotopic Uranium content. A summary of liquid effluent discharges is provided in a table in the attached Environmental Data Summary.

Chemical Waste Treatment

All process liquid effluent streams are treated to remove radiological impurities using quarantine tanks and diversion tanks inside the chemical controlled area of the plant; a final uranium removal process is then completed at the advanced Waste Water Treatment Facility by reacting the waste stream with a solution of sodium silicate and removing the uranium by a continuous rotary filtration process. The effluent stream is then discharged to the chemical wastewater treatment facility for chemical removal and to assure compliance with the SC-

DHEC/EPA NPDES (SC#0001848) liquid effluent discharge permit. The primary liquid waste generated in converting uranium hexafluoride into uranium dioxide is ammonium fluoride. The waste stream is treated with slaked lime to supply the pH adjustment necessary for ammonia distillation/recovery and fluoride removal. Recycled ammonia (<25%) is stored at tank farm bulk storage for reuse in the ADU conversion process.

The liquid effluent is tested with the required frequencies to demonstrate continuous compliance for the following parameters: pH, Fluoride, Ammonia, Dissolved Oxygen, BOD5, Total Suspended Solids, Phosphorus, Fecal Coliform, and Chlorine. The plant routinely complies with NPDES permit limitations. A new permit was negotiated with South Carolina Department of Health and Environmental Control effective July 1, 2004. Regulatory compliance history is summarized in the table at the end of this section and documented exceedances are noted. From this table it can be concluded that Westinghouse maintains full abeyance with NPDES permit conditions. A copy of the SC-DHEC liquid effluent NPDES permit #SC0001848 is provided as Attachment I.

Following appropriate testing and assurance that permit limits are met, process waste is combined with sanitary waste and other miscellaneous waste and pumped a total distance of approximately 4 miles to Congaree River via a single six inch discharge line. Current typical daily liquid effluent discharges average approximately 130,000 gallons/day, or 0.201 ft3/sec.

The line discharges into Congaree River approximately 25' from the bank using a submerged 3 port diffuser, to a depth approximately a minimum of 6' below the water's surface. This diffuser insures prompt immediate mixing and dilution of the waste stream (to an in stream waste concentration, IWC, of less than 1% within 50 feet of the discharge) with Congaree River. Historical average Congaree River flow of 9326 ft3/sec and Westinghouse average liquid effluent flow of 0.201 ft3/sec results in a typical average dilution factor of 46,363.

11. Generation rates for all effluent and waste streams

Information needs to be gathered for a more formal response.

12. Potential impacts from removed or revised license conditions

For this license renewal, there are no impacts from removed or revised license conditions. There are no changes to the scope of licensed activities incorporated into this renewal application

13. Storm Water management information

The "Storm Water Pollution Prevention Plan" and the "Hazardous Materials Emergency Response and Best Management Practices Plan" including the SPCC

Oil Spill Prevention Plan, and the Site Emergency Plan effectively implement storm water control. These plans effectively control hazardous chemicals and oils, insure against storm water contamination, and provide an emergency response organization.
The storm water plan implements the following protocol:

1. Provides containment, drainage control, and diversionary structures.

2. Prevents discharges from liquid storage areas.

3. Prevents discharges from material storage areas.

4. Prevents discharges from material loading and unloading areas.

5. Prevents discharges from material handling/processing/transferring areas.

6. Introduces facility security programs to prevent spills.

The following references are provided from those documents:

- A complete control system of storm drain conveyance access points, control structures (sumps), and plugs had been previously developed to insure against in leakage of non-storm water (i.e. hazardous chemicals or oils) into the storm water system. Also, culvert control structures had been previously installed at storm drain discharge locations A-E to terminate flow in the event of a spill. The two main branches of the storm drain lines connect on the Southwest side of the plant at the road culvert where the "C" main control valve is installed. These structures are documented on Drawing 600 FO7CV02, Sheet 1. Complete secondary containment dike systems sufficient to contain the liquid contents of the largest container in the tank farm have been installed at tank farm bulk chemical and oil storage locations to prevent intrusion of non-stormwater into the stormwater system. The Site Emergency Organization will function as the responsible group for major spills using the Site Emergency Director, Incident Commander (Emergency Coordinator), and the Emergency Brigade.
- Trained Chemical or URRS workers can also respond to spill events
- The Incident Commander (Emergency Coordinator, IC) will function as the incident commander for spills
- The Manager of Chemical Operations and the Waste Disposal Engineer will function as On-Scene Technical Advisors
- The Environment Health and Safety Engineer will function as a plan advisor
- The following drawings are referenced relative to oil spill response and hazardous material spill response
  (1) 600F07CV01- Sheets 1 & 2 Site Drainage Ditches

(2) 600FO7CV02- Storm Drain Locations
(3) 601FO3CV01- BMP Hazardous Chemical and Oil Storage - Exterior
(4) 522F01AR01- Hazardous Chemical and Oil Storage - Interior

- Relevant portions of the "Hazardous Material Emergency Response and Best Management Practices Plan" and Site Emergency Plan provide guidance during emergency situations, and were included as a resource in the development of this planning effort.
- Routine monitoring will occur to assure against storm water contamination
- An annual site compliance inspection is completed to verify performance

14. Mixed waste

No mixed waste is present or generated on-site

15. Other

- Potential impacts of flooding on all CFFF operations and processes involving licensed materials are discussed in the Site and Structures ISA Summary. Other parts of the entire site may flood or get more swampy, but this not affect any licensed activities.
- Programs are place to prevent raw materials and wastes from being released to the environment. These programs include the Storm Water Pollution Prevention Plan, the Hazardous Materials Emergency Response and Best Management Practices Plan, the SPCC Oil Spill Prevention Plan, and the Site Emergency Plan. These plans specify that raw materials are diked, spills are cleaned up and any effluents are treated through appropriate systems. In addition, the configuration management program assures that all changes to the facility are reviewed and that appropriate controls are in place to assure protection of the workers, the public and the environment.
- Current and future production levels are anticipated to remain at full capacity, approximately 1350 MTU/year. Current and future employment levels are also expected to remain stable at approximately 1200 employees.
- Westinghouse has not performed studies on water use in the Congaree watershed. There are no known environmental impacts or cumulative effects on the Congaree watershed due to CFFF operations. It is recommended that you contact the state of South Carolina if additional information is needed on Congaree watershed water usage.

16. Liquid Effluent Discharges/Gaseous Effluent Discharges

Year	Gaseous Effluents, uCi First Half	Liquid Efluents, uCi First Half	Gaseous Effluents, uCi Second Half	Liquid Efluents, uCi Second Half
1996	223.50	21,107.80	261.40	25,688.50
1997	207.30	30,540.20	221.40	22,349.10

1998	188.80	21,230.10	292.50	22,561.20
1999	200.70	27,254.40	252.40	23,844.40
2000	223.10	56,592.70	278.70	67,389.10
2001	224.10	32,374.30	333.50	30,769.00
2002	288.90	24,545.90	267.20	39,733.40
2003	291.60	17,194.90	218.90	37,304.20
2004	314.80	26,813.20	283.8	23,171.8
2005	269.3	13,410.1	261.6	12,170.0

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