

MEETING REPORT

DATE: January 25, 2006

TIME: 8:00 a.m. - 12:00 Noon

PLACE: U.S. Nuclear Regulatory Commission (NRC)
One White Flint North, Commissioner Hearing Room
11555 Rockville Pike
Rockville, MD 20852

PURPOSE: To discuss the Hematite Decommissioning Plan deficiencies and decommissioning path forward with the licensee, Westinghouse Electric Company LLC (WEC).

ATTENDEES: Refer to Attachment A

BACKGROUND:

WEC submitted its Decommissioning Plan (DP) for the Hematite Facility in September 2005, with supplemental information in October 2005, and December 2005. A DP is a detailed description of the activities that the licensee intends to use to assess the radiological status of its facility, to remove radioactivity attributable to licensed operations at a facility to levels that permit release of the site in accordance with NRC regulations and termination of the license, and to demonstrate that the facility meets NRC requirements for release. A DP typically consists of several interrelated components, including: 1) site characterization information; 2) a remediation plan that has several components, including a description of remediation tasks, a health and safety plan, and a quality assurance plan; 3) site-specific cost estimates for the decommissioning; and 4) a final status survey plan.

Staff conducted a 90-day acceptance review using the Consolidated NMSS Decommissioning Guidance (NUREG-1757) and a limited technical review in accordance with the Division of Waste Management and Environmental Protection (DWMEP) Decommissioning Directorate procedures. On January 5, 2006, staff of DWMEP informed WEC that the DP for its Hematite Facility was inadequate and was not acceptable for a detailed technical review.

AGENDA: Refer to Attachment B

DISCUSSION:

NRC stated that the purpose of the meeting was to discuss the deficiencies in the DP and convey NRC's expectations on what type of information WEC should provide on the major issues identified in the January 05, 2006, letter (ML053550047) so that for the next submittal of the DP staff will be able to accept the DP for a detailed technical review. It is NRC expectation that the quality of a DP should be such that the staff will be able to review it in 12 months with one round of Requests for Additional Information (RAIs). NRC implemented an expanded 90-day acceptance review period to avoid numerous rounds of RAIs.

NRC believes that this meeting was an opportunity for WEC to understand the issues and talk to the staff reviewers. NRC staff went over each area that contributed to the deficiencies and discussed information needed to meet the NRC requirements for decommissioning; however, the discussion was not on the same level of detail as a RAI and this meeting does not preclude RAIs in the future.

NRC noted that a delay in the submission of the DP and a delay in the completion of decommissioning of the site may impact safety, cost, schedules and public confidence. It is important that WEC resubmit an acceptable DP in a timely manner and the site is decommissioned in a timely manner in accordance with NRC regulations.

WEC expressed its desire to know what additional information is needed in order for NRC to accept the DP for a detailed technical review. WEC stated that it understood the level of NRC staff technical review completed and is committed to supplying what is needed to continue the process. WEC asked if another 90-day DP acceptance period would be required. NRC stated that the acceptance review for the re-submittal of the DP would probably not be a 90-day review, but would rather focus on the areas that were deemed to be deficient and could be as short as a 30-day review period.

The NRC Project Health Physicist discussed the deficiencies he noted in the Hematite DP and Soil Survey Plan (SSP). Staff reviewed the information to determine if there was sufficient information to determine if the remediation work could be performed safely for remediation workers, minimize releases to the environment, ensure that there is no undetected residual radioactivity, and provide sufficient information for use in the design of final status surveys (FSSs). Staff concluded that the DP lacks sufficient information to begin a detailed technical review of the DP. Site characterization information that was provided was incomplete and not sufficient to demonstrate that the decommissioning, especially the remediation of the burial pits, can be performed safely. A summary of site characterization and FSS Plan deficiencies is provided in Attachment C.

The NRC Project Groundwater Hydrologist discussed the deficiencies he noted in the Hematite DP. Overall, staff concluded that conditions of the site and outdoor areas are not sufficiently described in this DP per the regulatory requirement of 10 CFR Part 70.38(g)(4)(I). The information submitted in the DP does not meet the acceptable guidance provided in the NUREG-1757, Vol. 1, Rev. 1. The DP should be the stand-alone document that should include the characterization data, key items and references. The Hematite Remedial Investigation (RI) is mentioned in the DP, but it was not provided as part of the application. Attachment D provides a summary of the ground water/surface water concerns.

The NRC Project Dose Modeler discussed the deficiencies she noted as part of her review of the Hematite DP. Staff concluded that additional supporting information and documentation are required from the licensee that may take more than the typical one round of RAIs. Staff discussed some of the issues

identified in the DP that will require further clarification and additional information. A summary of the discussion is provided in Attachment E.

The NRC Project Environmental Reviewer stated that there is not enough information to begin the detailed technical review for the Environmental Review. After reviewing the Hematite DP, staff concluded that the Environmental Report (ER) is incomplete. Often in the Hematite ER, the information that is present is too general. In addition, some conclusions are stated without an explanation or data. Overall, there is not enough detail and data to permit an independent review and determination of significance of potential impacts to the human environment. NUREG-1748 provides a list of areas to be addressed and the details to be provided appear as bullets. Staff recommended that the licensee review this guidance again. This guidance was given to WEC at the May 2005 meeting between NRC and WEC at Headquarters (ML051450023). A summary of this discussion is provided in Attachment F.

The NRC Project Financial Reviewer discussed the deficiencies he noted in his review of the Hematite DP. Staff stated that as a general observation, the Hematite DP financial assurance information needs to be more detailed, needs to identify and justify key assumptions and needs to describe the methods and costs for all activities. A summary of this discussion is provided in Attachment G.

OPPORTUNITY FOR COMMENT:

Mr. Ben Moore of the State of Missouri Department of Natural Resources (MDNR) said that MDNR considers waste treatment a sensitive issue and a review of WEC waste treatment proposal will be needed. He noted that no permits for decommissioning of the Hematite site are required under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

CONCLUSIONS:

Staff could not verify from the DP submittal that there was sufficient information to allow NRC staff to evaluate what will be remediated, the potential safety issues associated with remediation, whether the remediation activities and radiation control measures proposed by the licensee are appropriate for the type of radioactive material present, whether the licensee waste management practices are appropriate, and whether the licensee cost estimate are plausible. Staff also determined that there was insufficient information for staff to be able to evaluate the cumulative potential impacts to meet NRC National Environmental Policy Act obligations for this proposed licensing action.

ACTIONS:

1. NRC is to provide WEC with information on NRC guidance on waste treatment (NUREG-1556).
2. NRC is to evaluate when the criticality license amendment request should be submitted to NRC in relationship to the DP and the development of the Environmental Assessment (EA).
3. WEC is to discuss further with NRC its proposal for trenching and its relationship to characterization of the burial pits.
4. NRC is to provide WEC with examples, if there are any that are not classified

or proprietary, of previously approved amendments relating to mixed waste treatment on site.

5. WEC is to inform NRC whether a further conference call to discuss EA details with the NRC would be beneficial to WEC in revising the Hematite ER.
6. NRC is to provide WEC with examples, if there are any that are not classified or proprietary, of previously approved amendments related to remediation of burial pits with mixed wastes. Further discussion between NRC and WEC may be necessary.
7. WEC to provide NRC with a schedule for submitting the DP within a few weeks.

ATTACHMENTS:

- A. Meeting Attendees
- B. Agenda
- C. Site Characterization and Final Status Survey Comment Summary
- D. Groundwater Comment Summary
- E. Dose Modeling Comment Summary
- F. Environmental Report Comment Summary
- G. Financial Assurance Comment Summary

Docket No.: 070-00036

License No.: SNM-00033

MEETING ATTENDEES

Date: 01/25/06, 8:00 a.m. - 12 noon

Topic: Meeting with Westinghouse Electric Company LLC, to discuss the Hematite Decommissioning Plan Deficiencies and Decommissioning Path Forward

NAME	AFFILIATION	PHONE NUMBER
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A. Joseph Nardi	WEC	(412) 374-4652
Bill Lavallee	WEC	(724) 722-5172
Mark Wetterhaan	WIN STDN & STRANN LLD	(202) 282-5703
Michele Gutman	WEC	(412) 374-5570
Susanne Woods	NRC/NMSS	(301) 415-7257
Meghan Thorpe-Kavanaugh	NRC	(301) 415-5735
Harry Felsher	NRC/NMSS	(301) 415-5521
Allan Gross	NRC/NMSS	(3010) 415-8138
Richard Chang	NRC/NMSS	(301) 415-7188
J. Stewart Bland	Chesapeake Nuclear Services	(410) 266-9174
Bruce Watson	NRC	(301) 415-6221
Dan Gillen	NRC/DWMEP	(301) 415-7295
Claude Wiblin	Chesapeake Nuclear Services	(410) 923-6533
Sam Nalluswami	NRC	(301) 415-6694
Jennifer Davis	NRC	(301) 415-7264
Marisa Higgins	NRC/OGC	(301) 415-4060
Jim Lieberman	Talisman International	(301) 229-3607
D. Orlando	NRC	(301) 415-5971
Ben Moore (by phone)	MDNR	
Mike McCann (by phone)	NRC/RIII	
Amy M. Snyder	NRC/NMSS	(301) 415-8580
Anita Turner	NRC/NMSS	(301) 415-5508

AGENDA

- 8:00 a.m. Introductions
- 8:15 a.m. General Discussion about Deficiencies of Submittal (NRC and WEC Senior Management)
- 8:30 a.m. Technical Discussions (NRC PM)
- 8:35 a.m. Site Characterization and Final Status Survey (HP Bruce Watson and Hydrogeologist - Sam Nalluswami)
- 9:30 a.m. Dose Modeling (Anita Turner)
- 10:30 a.m. Environmental Assessment (Susanne Woods)
- 11:00 a.m. Cost Estimate (Thomas Fredrichs)
- 11:30 a.m. Opportunity for Public Comment
- 11:45 a.m. Summary, Action Items, and Closing Remarks
- 12:00 p.m. Break
- 1:00 p.m. Timeliness Rule (Attorney to Attorney Discussion)

SITE CHARACTERIZATION AND FINAL STATUS SURVEY COMMENT SUMMARY

SITE CHARACTERIZATION

Staff noted that by letter dated June 20, 2005 (ML051650022), NRC did not accept or approve the Hematite Site Characterization Report dated January 2005. In this letter, staff identified the need for WEC to prepare more detailed supporting documentation and justification of target radionuclides. This letter also reflected a schedule for submitting additional information, including groundwater characterization data, background data, and comprehensive environmental data. The September 2005 DP submittal did not adequately provide such information.

WEC stated that it was its opinion that the June 20, 2005 letter only discussed that the format of the characterization data was not acceptable. WEC also noted that it inadvertently did not include all of the groundwater characterization that was available at the time of the September 2005 DP submittal.

Burial Pits

Staff commented that characterization of the burial pits conducted to date is incomplete or inadequate. In the decommissioning license amendment application package there was very limited characterization for the burial pits. Staff noted that only three (3) characterization samples have been performed in the burial pits. In addition, there are burial pits with no documentation of the contents. While the licensee conducted interviews of former Hematite employees, the burial pits must be characterized to verify the contents to ensure proper safety precautions can be taken. Staff believes that industry practice of core boring can be performed safely by workers with proper procedures, precautions and equipment and releases to the environment can be controlled to acceptable levels. The staff suggested that there are methods, such as ground penetrating radar (GPR) and Magnetic Resonance (MR) that have been used at other sites that are available to determine the location of buried components and materials.

WEC stated that it had performed GPR studies and believed them to be inconclusive. The staff recommended that WEC should have referenced or provided these studies for staff independent review.

Under Building Contamination

Under Building Contamination (UBC) characterization sampling may not have been adequately performed. For process buildings where there has known to have been spills and leaks, the licensee must perform UBC characterization to assess any hazards. Data present in Table 14-3 is from 8 locations, but states that the data is limited on Tc-99, which is highly mobile in soils and groundwater and U-243 (172 pCi/g) and Tc-99 (7.5 pCi/g) warrant additional investigation. Concrete cracks and crevices, building joints, wall and floor interfaces are potential paths to soil and ground water environments below the foundations. Floor piping and sumps can also be pathways that may contribute to UBC and the environment. At some point in time, WEC needs to complete the radiological characterization of buildings to be removed to assess the UBC and those that will remain standing to determine that they meet residual criteria. NRC expects licensees to explain, in the DP, its strategy for safely obtaining this data. If a licensee wants to obtain this data after the buildings are removed or at a later date, then NRC expects the

licensee to explain why the data is being obtained at a later date, how the data will be obtained, and how the data will be evaluated with respect to assumptions made in the DP.

WEC stated that it believes that it would not be efficient to core through the cement foundations to obtain soil samples at this time. Instead, WEC stated that it plans to take samples after the buildings have been demolished.

Planned Decommissioning Activities

There is insufficient detail in the DP to demonstrate that the soil excavation and remediation will be performed safely. DP Section 14.2, Limited Accessibility Areas (page 157), states, the Burial Pits are not completely accessible for sampling and that advancing soil borings into unknown wastes raises serious concerns regarding environmental contamination and worker health and safety. Certain wastes known to be present in the burial pits present considerable risk if encountered in an uncontrolled manner. For example, because the exact location of any individual container is unknown, there is the possibility that drilling could puncture or break a container, resulting in releases to the subsurface environment and exposures to workers. Additionally, it is stated methods for decommissioning these pits are described in Section 8.3.2. Work plans will address survey and excavation methods to be used to remove the contents of the pits. Section 8.2 of the DP, states that, conventional earth moving equipment and soil sloping techniques will be used to remove the soil overburden, carefully expose the top of the pit, and excavate around one side so that the contents can be removed from the top down. However, no specific controls are described to demonstrate that the excavation and remediation of the burial pits can be performed safely or prevent unacceptable releases to the environment.

WEC stated that it has a liquid waste runoff collection system and will discuss its use in the next submittal of the DP. In addition, WEC stated that it thought that just noting that it will perform work in accordance with its Health and Safety Program was sufficient for the DP.

The DP proposes a trenching pilot-scale process in lieu of performing characterization sampling of the burial pits. As stated in Section 8.3.2 of the DP, the purpose of the pilot-scale process will be to provide more detailed characterization, to ascertain the need for excavation dewatering, control of potential airborne emissions and the need for special waste removal techniques. Staff believes that the trenching description is inadequate as described to ascertain that the method will result in the safe removal of materials and waste and reduce the potential for releases to the environment.

WEC stated that it had submitted a plan last year for burial pit trenching activities and staff did not approve it. WEC stated that staff did not allow any burial pit characterization or trenching and that such activities would have to be described and submitted with the DP. The NRC PM stated that WEC may submit a license amendment for such activities. Currently the license does not allow subsurface work.

For the trenching excavation method described in Section 8.3.2 of the DP, it is stated that a work plan will be developed. The DP does not provide any information on worker safety or environmental release precautions to be taken given the risks. The conventional trenching method described appears to be a higher safety risk activity than soil core boring described in Section 14.2.1 of the DP. Given the uncertainties of the contents of the burial pits, the staff

considers core boring a conventional method, as well as the preferred methodology to safely obtain characterization information. WEC believes that use of core borings is not safe and there would be a potential for additional groundwater contamination.

On January 18, 2006, a meeting (ML060260607) was held between NRC and WEC to discuss the unique safety issues and features of the burial pits. However, this information was not included in the DP. Given the unknowns discussed at this meeting, the licensee should perform a comprehensive characterization in order that a detailed work plan for burial pit remediation can be developed that incorporates safety and precautions for workers and prevents unplanned releases to the environment. Furthermore, WEC needs to provide detailed discussion on the safety precautions to be implemented to prevent exposures to workers and prevent releases to the environment due to burial pit characterization and for burial pit remediation activities. WEC stated that it believed that this information could be submitted in a separate license amendment and did not include it with the DP.

The staff has concerns that the planned remediation activities are not clearly identified and adequately described and do not have adequate safety controls described to prevent unacceptable releases to the environment. The DP does not adequately address airborne and water management strategies that will prevent potential unacceptable releases to the environment and the DP does not identify how WEC will demonstrate compliance with the NRC license. The DP discusses only the use of water for dust suppression. No other methods to control airborne effluents are discussed. The DP does not discuss how ground water intrusion, rainwater run-off, and water used for dust suppression will be managed. It would appear that significant water issues are anticipated since the soil survey plan states that a technical basis document will be developed for conducting surveys underwater. WEC stated that it believed that once it performed the trenching, it would be able to determine if water would be a problem with regard to surveying.

Based on the January 18, 2006 meeting (ML060260607) between the staff and WEC, it is not completely known what materials may be in the burial pits. Therefore, if the licensee cannot provide acceptable justification to the NRC on why criticality control is not needed during any burial pit activity, then the licensee may be required to manage water as a moderator for criticality control. At this meeting, WEC promoted detailed plans for special nuclear material (SNM) discovery that allows them to continue work. For environmental control issues, WEC has proposed little or no environmental controls for protecting the health and safety of the workers or public to allow them to continue work.

Given the climatology, site hydrology and surface water issues, airborne and water effluents management issues must be planned to ensure that radioactive releases are maintained ALARA (and non-radiological issues such as suspended solids, etc. are controlled in accordance with permits). WEC needs to provide details for environmental controls to be employed during decommissioning activities, and specifically provide effluent controls to be implemented during remediation activities.

WEC commented that it did not understand how additional characterization data would potentially impact dose modeling. NRC stated that it is important to note that there may be situations that arise, that require the licensee to submit a license amendment to address dose modeling. Two of the situations that may arise involve new information gathered during remediation (or in this case, during characterization) activities that was not identified during a

desultory site characterization. One situation arises when new sources (e.g., contaminated groundwater) or new radionuclides are discovered during remediation. Another situation arises when new information invalidates the assumptions used in dose modeling. Examples of important assumptions can include, but are not limited to, extent and depth of contamination, area of influence of waterborne pathways, and physical characteristics such as Kd or porosity. If new information were either (1) to decrease the single radionuclide or single source Derived Concentration Guideline Levels (DCGLs) or (b) to require new DCGLs to be approved, the licensee would need to submit a license amendment, in most cases. The licensee should contact NRC staff to discuss the situation and to scope out the extent of the license amendment.

FINAL STATUS SURVEY

As referenced in the DP, the Hematite SSP was submitted by WEC as a separate document. From the staff review, it appeared that WEC intended that this SSP will supplement Section 14, Facility Radiation Surveys, of the DP and provide the technical details for compliance with NRC guidance. After reviewing the documents, staff concluded that both the DP and SSP do not contain sufficient detail to perform a detailed technical review. Staff stated that it believes that while the DP and SSP commit to the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) implementation for the Final Status Survey Plan, neither document provides implementation details specific for the site. Fundamentally, the DP provides examples of how the licensee is planning to generally conduct the activities, but insufficient characterization data has not been provided for the licensee to develop the Operational DCGLs, from which the FSS measurements will be developed. If characterization data is not available at this point in time, WEC should provide its strategy for obtaining and evaluating characterization data for the burial pits and subsequently make a commitment to verify the assumptions made in the DP to ensure they remain appropriate. Based on the shortcomings in the information provided, the staff is not able to make a determination that the approach is adequate from both a technical and safety standpoint and that the decommissioning can be safely implemented. Other concerns noted are:

- The licensee has not decided to include whether the site buildings will remain or be demolished.
- The Characterization Report contains incomplete characterization data provided for the burial pits and soils under process buildings. (NUREG 1757 Vol. 1 AP. D section XIV b).
- Operational DCGLs will be developed at a later date based on characterization data to be determined at a later date.
- The impact of new groundwater contamination information, etc. (NUREG 1757 Vol. 1 AP. D section VII. d) is a concern and the impact on future groundwater dose.
- The SSP is technically deficient. WEC stated that there is many technical basis documents (TBDs) that will need to be developed to implement the survey plan. These include, but may not be limited to:
 1. A site-specific subsurface soil averaging TBD: The DP references the AAR report for averaging of volumetric subsurface soil contamination. While the concept of returning contaminated soils that are below the DCGL is not new, the AAR report is specific for thorium at a site where there is no groundwater contamination. Hematite has numerous nuclides that should require WEC to perform site-specific modeling.

2. Underwater survey of soil surfaces TBD: This seems impractical because the contaminant nuclides are alpha (low energy x-rays) and low energy beta emitters.
3. Background TBD: Although the DP does provide some reference background concentrations in Appendix F, the SSP states that background concentrations for nuclides of interest will be established to identify residual contamination attributable to facility operations (NUREG 1757 Vol. 1 AP. D section XIV d).
4. Surrogate Nuclides TBD: According to the SSP, characterization data will be used to evaluate surrogate radionuclides and determine scaling factors. The DP states that the guidance in MARSSIM Appendix I as the basis for the methodology for developing the surrogate measurements. Since the characterization data is incomplete, additional sample data will need to be obtained and evaluated (NUREG 1757 Vol. 1 AP. D section XIV d). A licensee must identify what radionuclides it will measure and what radionuclides it will account for by surrogate analysis. At the time a licensee submits a DP, it should know the target radionuclides and it should be able to identify which of the target radionuclides it will be measuring and which ones will be accounted for.
5. Dose Contribution Basis TBD: According to the SSP, the dose contribution fractions will be calculated based on analytical results from characterization samples. This is not technically acceptable since many critical areas; burial pits and under-building soils have not been fully characterized.
6. FSS Survey Instrument TBD: According to the SSP, an analysis of survey instruments and detector capabilities will be performed prior to survey activities. DP Table 14-5 provides a list of instruments typically used for field measurements, but in is insufficient to determine that quality FSS measurement will be performed (NUREG 1757 Vol. 1 AP. D section XIV d).
7. Minimum Detectable Concentration (MDC) TBD: will need to be developed to document the calculation basis for the field and laboratory instruments to be employed. (NUREG 1757 Vol. 1 AP. D section XIV d)
8. MDC Scan TBD: will need to be developed to define the limitations for the scan surveys and human factors in order to implement the yet undefined operational DCGLs (NUREG 1757 Vol. 1 AP. D section XIV d).
9. Discrete Point Measurement Approach TBD: WEC states that a Discrete Point Measurement Approach for scans will be developed if needed. (NUREG 1757 Vol. 1 AP. D section XIV d)

WEC stated that it was told by staff in the past that the approach of developing technical basis documents in the future was acceptable. The NRC PM stated that she is not aware of such a conclusion for the Hematite DP and it will now be evaluated by the current staff technical review team.

GROUNDWATER COMMENT SUMMARY

The regulatory requirement, for the decommissioning plan (DP), per 10 CFR 70.38(g)(4)(I) is: A description of the conditions of the site or separate building or outdoor area sufficient to evaluate the acceptability of the plan. The NUREG-1757, Vol. 1, Rev 1, provides in detail the acceptable criteria and the information to be submitted for the DP.

Section 3.6 Surface Water Hydrology

Detailed technical review of the Surface Water Hydrology Section in the DP will result in request for additional information (RAI).

Section 3.7 Groundwater Hydrology

This DP refers to Hematite RI (Remedial Investigation) Report (Ref. 7) for the components of the hydrogeologic system.

The DP should be the principal licensing document for license amendment and other NRC regulatory purposes. The RI is not the licensing document. Therefore detailed characterization information should be included in the DP and its Appendices. As an example, the equations for groundwater flow; velocity, transmissivity and other geohydrological parameters may be included in the DP by reference to textbooks or other standard documents. But the detailed calculations, the field data and the parameters used should be provided in the DP. The RI normally contains not only the radiological data but also information for remediation required by the EPA and other regulatory bodies. The additional information in the RI is unnecessary for decommissioning purposes. If this current DP approach is followed, other licensees may use a similar practice of referring to documents such as an RI for decommissioning purposes.

Examples:

On Page 50 of the DP, it is stated that the estimates have been made of groundwater flow velocities based on Darcy law (Ref. 7) for a variety of potential flow paths. The results obtained for overburden is given as a range between approximately 20 and 300 ft/year. Instead of just providing the results, the relevant parameters and the resulting calculations should be provided in the DP.

On Page 50 of the DP, the RI is referenced to the bedrock boreholes at the Hematite site. Instead of referring to the RI, the borehole data should be provided in the DP (as an Appendix). Additional geologic cross-sections, groundwater elevations, groundwater contours and other geohydrologic parameters should be included in this DP.

On Page 51, it is stated that based on the hydraulic conductivity results (Ref. 7) the following conclusions can be reached. The DP should contain the hydraulic conductivity values including the rationale and the conclusions.

On Page 55, it is stated that groundwater is widely used as the primary source of household water. Therefore, groundwater characterization and evaluation should be performed in detail.

DOSE MODELING COMMENT SUMMARY

Some of the issues identified in the DP that will require further clarification and additional information include: 1) appropriate justification for the selected land-use scenarios and 2) the method used for developing the sensitivity analysis.

The NRC Project Dose Modeler made the following remarks regarding modeling deficiencies in the Hematite DP:

- The sensitivity analysis that was performed only considered intake parameters.
- Physical parameters were not taken into account.
- A more complete analysis of all parameters is needed.
- Applicable guidance can be found in NUREG-1757, Volume II, Appendix I, Section 7.
- It was noted that NUREG-1757, Volume 2, Appendix M was being revised and was out for public comment.
- Applicable guidance on sensitive parameters can be found in NUREG-6676.

WEC identified two land use scenarios in its DP (industrial scenario and the residential gardener).

ENVIRONMENTAL REPORT COMMENT SUMMARY

NUREG-1757, Consolidated Decommissioning Plan Guidance was used by the staff for the 90-day acceptance review. Appendix A, of this guidance document (page D-18) notes that licensees should follow NUREG 1748, environmental Review Guidance for Licensing Actions Associated with NMSS Programs.

The NRC Project Environmental Reviewer based her review on Section 6 of NUREG-1748 and concluded that the Hematite Environmental Report (ER) did not have enough information that could be used for the staff development of an Environmental Assessment (EA). The ER should result in a stand-alone document. It may reference other documents to include the DP, by sections and page numbers. It must provide the most up to date information that addresses the issues completely.

From the ER, one must be able to develop a picture of the current environmental situation on site and off site. WEC placed a lot of emphasis on the 10-acre central tract, but WEC did not for other areas. Land uses must be identified. Radiological and nonradiological contamination must be identified.

Staff also expects that information and conclusions that are provided are explained and source of data used is referenced and made available to NRC for independent technical review. Staff uses the information and makes it publicly available to demonstrate where and how NRC is getting the information for the EA. In its EA for the site, staff must look beyond the fence/property lines. Staff must also examine past, present and future activities and potential impacts. Staff must look at the reasonably foreseeable zoning.

There were three key reasons why staff concluded that there was insufficient data necessary to start its detailed technical review of the Hematite Environmental Report. The reasons are discussed below:

1. WEC followed NUREG-1748 format and outline, but often did not address all of the applicable information identified in a subject area.

Examples:

- Cumulative Impacts (6.2.3, p 6-4, Alternative section) was not addressed. Licensees must define past, present, reasonably foreseeable future activities at and near the site. Alone it may not have a significant impact, but combined with the Hematite proposed action, there potentially could be a significant impact (e.g., chemical releases of nearby industries that are no longer in business, etc.)
- Industrial and Agriculture uses for the site were not identified in the ER.
- WEC did not identify the list of preparers. NUREG-1748 identifies the information to provide. Specifically, the preparers and their credentials establish their credibility to the information provided.
- Impacts Section-Volatile Organic Compounds (VOCs) were not identified. The ER reviewer learned through discussion with other NRC project reviewers that site specific VOCs are offsite. Staff needs to know the history. Are the VOCs still traveling off site? The status of the VOCs is not mentioned or actions taken have not been identified.
- On Page 12, the ER states that surface waters are used to water livestock. There is not

enough information given for staff to evaluate whether this will lead to short term increased release of contaminants to surface waters and whether there will be a need to remediate some surface waters.

- The ER identifies a spring fed pond(s); surface water next to burial pits; and livestock on rental property on site. Not enough information is given so that staff can evaluate the potential impacts to the environment.
- The ER does not identify anything offsite. Staff needs to know if there is a potential for any game ingestion, fish ingestion, or agricultural practices (irrigation) because staff must look at pathways to the human food chain, as well as pathways due to recreational activities and associated exposures. WEC noted at the meeting that WEC is monitoring residences, but this is not noted in the ER. In addition, WEC stated that radiological contamination is not offsite. Staff asked WEC to explain in the ER how it knows that there is no radiological contamination offsite.

2. To Be Developed (TBD) Activities: NRC cannot evaluate TBD activities to determine if the activities significantly impact the environment. NRC cannot tell what the environmental situation is at the site.

Examples:

- There is not enough detail on how WEC plans to excavate the burial pits.
- Examining the ecological Monitoring Section, Section 6. 3 of ER (page 171): As part of the site evaluations being conducted under the NCP, Westinghouse is performing a screening-level ecological risk assessment. The screening-level ecological risk assessment was not provided nor were the results of the final report discussed in detail.
- The ER notes, as part of the process, Westinghouse will, in consultation with responsible federal and state agencies, identify ecological resources associated with the site and the potential impacts to these resources. Yet no Federal Agencies are mentioned. It is not clear what the intent is with regards to NRC as one of the involved Federal Agencies. Staff is not aware of any interaction in this area. This raises questions about the statement intent and what type of interaction will be established in the future. Simply eliminating the statement or others in a future revision does not erase the statement on the publicly available document and hence, the question remains- How is NRC involved?
- On Page 62-63 (ER Section 4.13.2, Waste Impacts; Section 6. 4.13) the ER states, mixed wastes would be identified via characterization and volumetric sampling In general, the approach would be to treat hazardous waste on site as needed to remove the hazardous waste characteristic and then dispose of the residual waste off site at licensed facilities. There are no permits or required consultations identified nor are any authorizations (local, state, Federal) identified in the ER.

3. Information in one area of the report that does not agree with blank/lack of information in another area of the report or some areas appear to conflict.

Examples:

- On page 32 of the ER, in the Noise Section it states, Westinghouse owns 3 single-family houses on the property and leases them as residences.
- WEC does not address the impacts on these three rental properties, yet it is known that the groundwater on site is contaminated with radionuclides and the groundwater offsite is

contaminated with VOCs. Also there is no indication of where these rental properties are located onsite. WEC identifies that the nearest resident is 300 meters from the Hematite Site, but it is not clear if the rental property residents are the nearest residents. Also, the location of the contaminated groundwater plume is not identified with respect to the nearest residents.

- WEC clarified that the rental property residences are the nearest residences (300 meters from the point of release). Staff asked how WEC determined the point of release because staff could not determine this based on the characterization information provided.
- Staff noted that the summary table of Environmental Consequences on page 8-1 of the ER identifies short term impacts without an explanation of such information elsewhere in the document. WEC identified that there are no long-term impacts, yet the current impacts to be eliminated are not identified.
- On page 4 of the ER, it is noted that the site is in an agricultural region, but there is no mention of irrigation in the ER.
- On page 12 of the ER, it states that ground water is widely used as primary source of household water. Do the onsite residents use ground water or drinking or irrigation of gardens, or for livestock?

Furthermore, the Project ER Reviewer noted that she learned additional information (not found in the ER) by talking to others at the NRC. For example: Contamination found in wells on site, yet the potential for migration of the contamination was not mentioned. Also, at the January 18, 2006 meeting with NRC and WEC at Headquarters, staff learned that WEC has plans to shred/cut-up certain materials, if found in the burial pits, yet no mention of these actions are discussed in the DP or ER. The Project ER Reviewer also learned that the fence line was extended, yet the figures in the ER do not show this. WEC needs to update the diagrams or references to reflect current information. She also learned through discussion with other staff that there are a number of burial pits that are not documented, referred to as the unknown burial pits. She also, learned that trenching of burial pits is a planned activity for treatable studies, yet it is not discussed in the ER nor other activities associated with burial pit remediation.

WEC noted that there is a lot of information that was not identified in the ER that they should have taken credit for, such as the VOC contamination offsite and the actions which it has taken to remedy the situation.

FINANCIAL ASSURANCE COMMENT SUMMARY

The NRC Project Financial Reviewer stated that as a general observation, the Hematite DP financial assurance information needs to be more detailed, needs to identify and justify key assumptions and needs to describe the methods and costs for all activities. NUREG-1757 was used as the basis for the following comments:

Specifically, the WEC May 11, 2005 cost estimate for the Hematite decommissioning activities was reviewed. The estimate should be based on the cost of hiring an independent contractor to perform the work, therefore contractor overhead profit should be included in the estimate. However, the estimate did not specify whether or not contractor overhead and profit was included. Although groundwater contamination appears to be present, no costs for groundwater remediation were included in the estimate, and no explanation was provided to justify not including those costs. The estimate should identify the source of cost information such as internal cost data, contract prices, or cost guides. Furthermore, detailed information regarding the number of items and volume of materials to be removed or remediated should be included. Unit cost for waste disposal varied, but no explanation was included to justify the variation.