DIVISION OF SPENT FUEL STORAGE AND TRANSPORTATION REVIEW OF THE DOCUMENTED SAFETY ANALYSIS FOR WASTE PROCESSING AND SUPPORT ACTIVITIES, REVISION 17, DRAFT B; AND THE WEST VALLEY DEMONSTRATION PROJECT TECHNICAL SAFETY REQUIREMENTS, REVISION 10, DRAFT B

TAC NO. J00469

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Chapter 1: Site Characteristics

Comment 1-C1: Section 1.5, DOE-STD-1020-2002 does not require any design requirements for tornadoes, tornado driven projectiles/missiles or straight wind driven projectiles/missiles. Also, in the last sentence of the third paragraph of Section 2.4.5.4 it is stated that the "shield plug and lid … provide a cover and seal to protect the canister from the environment and postulated tornado missiles." However, on page 44 of 462 of the Document Safety Analysis (DSA) it is stated that there is no design requirement for projectiles/missiles. The only required wind-related design mitigation is for a straight wind. Consequences from credible natural phenonmenon should be addressed.

Basis: The cask must be analyzed to show that it will not slide, tip over, or drop in its storage condition as a result of a credible natural phenomenon event, including tornado winds and tornado missiles. Confinement casks are generally not vulnerable to damage from overpressure or negative pressure associated with tornadoes or extreme winds. However, they may be vulnerable to secondary effects, such as wind-borne missiles.

Path Forward: Regulatory Guide 1.76, "Design Basis Tornado for Nuclear Power Plants" and NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition – Design of Structures, Components, Equipment, and Systems" (Section 3.5.1.4) describe tornado winds and missiles. The guidance in the aforementioned documents for tornado missile protection should be consulted.

Comment 1-C2: The environmental characterization is not sufficient. Recent finding on the potential chloride-induced stress corrosion cracking (SCC, or related other corrosion) needs to be addressed in Man-made External Accident Initiators (Section 1.6). Chlorides may be deposited on the canister surface from de-icing salts on the road.

Basis: Some dry cask storage system (DCSS) designs utilize austenitic stainless steel canisters surrounded by concrete shielding structures to store spent nuclear fuel (SNF) at Independent Spent Fuel Storage Installations (ISFSIs). ISFSIs that are located where chlorides can be deposited on the canisters may have the potential for initiating chloride-induced stress corrosion cracking (SCC). Susceptibility to chloride-induced SCC depends on the environmental conditions at the canister surface, including the following key parameters: temperature; relative humidity (RH); areal density, composition and aqueous concentration of deposited salts; and the stress state of the canister, particularly in the weld and the weld heat affected zone. Recently national and international literature was reviewed and the studies are continuing internationally, additionally including chloride-induced crevice corrosion and microbially-influenced corrosion (NRC, 2012; SERCO, 2010).

The West Valley Nuclear Services (WVNS) canisters may have similar susceptible environments to corrosion with chlorides present from de-icing salts on the road (Barber, et al., 2001) and potential microbes, at expected lower temperature compared to DCSS due to lower heat loading and seasonal environmental temperature variations. Lower temperature, below ~ 80 °C (176 °F) is needed to form aqueous environments by salt deliquescence on the canister surface. If any corrosion were to penetrate through the canister wall, potential consequence of radionuclide release may occur especially under off-normal and accident conditions. The high-level waste (HLW) glass may be hydrated with environmental moisture (NRC, 2008) or swollen with radiation (Donald, et al., 1997). These may in turn cause radionuclide release by

increasing radionuclide release fraction, especially caused by any impact under off-normal and accident conditions.

Path Forward: The report needs to address potential chloride-induced corrosion and its consequence in the storage of HLW glass.

References:

S.H. Barber, N.W. Sachs, and R.N. Taylor, "*Long-Term Monitoring of Two Large Process Vessels*," Materials Performance, pp. 60-63, December 2001.

I.W. Donald, B.L. Metcalfe, and R.N. Taylor, "*Review of the Immobilization of High Level Radioactive Wastes Using Ceramics and Glasses*," J. of Materials Science, Vol. 32, pp. 5851-5887, 1997.

U.S. Nuclear Regulatory Commission (NRC), "Identification and Prioritization of the Technical Information Needs Affecting Potential Regulation of Extended Storage and Transportation of Spent Nuclear Fuel," NRC ADAMS ML120580143, 2012.

NRC, "Dissolution Kinetics of Commercial Spent Nuclear Fuels in the Potential Yucca Mountain Repository Environment," NRC ADAMS ML083120074, NUREG-1914, 2008.

SERCO, "Review of Environmental Conditions for Storage of ILW Radioactive Waste Containers," Report to NDA RWMD, SERCO/TASIE.2098/P3443, Issue 04, U.K. 2010.

Chapter 2: Facility Description

Comment 2-C1: In Section 2.4.5.3 on page101 (4th paragraph from the top), revise the statement, "the closure lid is also provided with 3 lifting points for the purpose of remote closure lid removal and installation," and associated description by recognizing that a 3-sling lifting amounts to a non-redundant configuration.

Basis: A three-point lifting is statically determinate and loss of any one lifting point will result in uncontrolled move of the load. Thus, each lifting leg should be sized for critical lift criteria with enhanced safety factors of 6 on yield strength and 10 on ultimate per ANSI N14.6 or NUREG-0612.

Comment 2-C2: This comment references Figure 2.4-33, Drawing 630087, on page 195. Revise, as appropriate, the drawing by providing notes on inspection and maintenance schedules for item 8, "Parker O-Ring," and item 12, "Outer Gasket," to ensure the vertical storage cask (VSC) designed service life of 50 years.

Basis: There is no indication in the Bill of Materials that the subject O-rings and gasket are qualified for the VSC design service life of 50 years.

Comment 2-C3: There is no Vertical Storage Cask (VSC) confinement design features information provided in the WVDP Documented Safety Analysis (DSA).

Basis: To clarify the confinement design features (leak tight, non-leak tight, or maximum allowable leakage rate) of the VSC.

Path Forward: Add a statement to clarify whether the VSC is leak tight or not. If not leak tight, the maximum leakage rate, per 10 CFR Part 72 and ANSI N14.5, should be provided.

Comment 2-C3: Section 2.4.5 High Level Waste Storage System (page 99) only describes the principal components of the VSC (including a basket to accommodate five WVDP high-level waste (HLW) canisters, a stainless steel HLW overpack, and a concrete and steel VSC) with no information of its confinement boundary and components provided.

Basis: To clarify the confinement boundary of the VSC and its confinement components which should be helium-leak tested.

Path Forward: Provide the confinement boundary of the VSC and identify its confinement components which should be helium-leak tested.

Comment 2-C4: Section 2.4.5.3, the HLW Overpack (page 100) delineates that the VSC is designed to accept an MPC-WVDP 5-cell basket assembly that is sized to accommodate five HLW canisters and to incorporate a welded single closure lid design. There is no description of the single closure weld for its confinement quality.

Basis: To clarify that the welded closure lid provides a cover and seal capable of protecting the canisters from the environment.

Path Forward: Describe, as appropriate, how the welded seal joining the single closure lid to the MPC-WVDP HLW overpack is performed, examined, and tested at shop to assure its confinement effectiveness.

Comment 2-C5: Section 2.4.5.3, the HLW Overpack (page 101) notes that all HLW overpack vessel shop welds are liquid penetrant (PT) examined after loading in accordance with Section VIII, Division 2 visual acceptance standards.

Basis: To assure reliability of the PT examination on the hot closure lid surface and the quality of the closure weld.

Path Forward: Provide the maximum temperature of the closure lid surface on which the liquid penetrant test (PT) was performed.

Comment 2-C6: There is no description of the vertical storage cask thermal design features, material temperature limits, thermal loads and environmental conditions, and analytical methods, models, or calculations.

Basis: The heat transfer characteristics of the storage system, any material temperature limits, and all necessary inputs to perform a realistic or conservative thermal evaluation of the vertical storage cask are required to confirm the thermal performance of the storage system.

Path Forward: In order to complete a review, the DSA would need to provide the design features, material temperature limits (if any), thermal loads, and material characterization that are used to perform the thermal evaluation of the vertical storage cask. Chapter 6 of NUREG-1567 “Standard Review Plan for Spent Fuel Dry Storage Facilities” and Chapter 4 of NUREG-1536 “Standard Review Plan for Spent Fuel Dry Storage Systems at a General License Facility” provide guidance on how the staff reviews these systems.

Comment 2-C7: There is no thermal analysis of the vertical storage cask.

Basis: This information is necessary to make a safety determination based on a thermal evaluation that demonstrates that predicted material temperatures remain below acceptable limits with adequate margin.

Path Forward: In order to complete a review, the DSA would need to provide a thermal evaluation and predicted material temperatures to demonstrate that the temperatures remain below allowable limits. Chapter 6 of NUREG-1567 “Standard Review Plan for Spent Fuel Dry Storage Facilities” and Chapter 4 of NUREG-1536 “Standard Review Plan for Spent Fuel Dry Storage Systems at a General License Facility” provide guidance on how the staff reviews these systems.

Comment 2-C8: The temperature of the canister surface and the HLW glass needs to be assessed. The degradation of the canister and HLW glass is likely to be sensitive to the thermal loading in the storage system.

Basis: Comment 1-C2 describes how the temperature could affect the integrity of the canister and HLW glass. Canister corrosion may occur at temperatures below ~ 80 °C (176 °F) with sufficient RH (e.g., aqueous corrosion). The hydration of HLW glass would occur at temperatures below 230 °C (446 °F). Radiation effects may be annealed at higher temperatures.

Path Forward: Thermal analyses need to be included to assess the temperature of canister and HLW glass.

Comment 2-C9: In Section 2.5.3.1.2, page 116 of 462 of the DSA, high-level mixed waste, spent nuclear fuel co-mingled with highly dispersible particulate debris (classified as RCRA hazardous waste) is proposed to be stored on the storage pad. There is not an adequate description that permits discernment of whether storage of this high-level mixed waste is appropriate for storage in the cask system.

Basis: 10 CFR Part 72 provides no regulatory provisions for storage of high-level mixed waste.

Path Forward: Clarify the regulatory basis for storage of high-level mixed waste.

Comment: 2-C10: Section 2.2.2.3, page 67 of 462 of the DSA, states that “no special considerations are required to protect against general site flooding.” NRC’s review evaluates site characteristics to determine if natural phenomena such as floods have been properly identified, quantified, and included in the ISFSI design bases. The effects of natural phenomena (e.g., floods) are considered to be accident events. Specific guidance for how the NRC

conducts this review is presented in Chapters 2 and 15 of NUREG-1567,"Standard Review Plan for Spent Fuel Dry Storage Facilities." Additional guidance for flood protection is given in Regulatory Guides 1.59, "Design Basis Floods for Nuclear Power Plants," and 1.102, "Flood Protection for Nuclear Power Plants."

Basis: Structures, systems, and components important to safety must be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, lightning, hurricanes, floods, tsunami, and seiches, without impairing their capability to perform their intended design functions. The design bases for these structures, systems, and components must reflect: appropriate consideration of the most severe of the natural phenomena reported for the site and surrounding area, with appropriate margins to take into account the limitations of the data and the period of time in which the data have accumulated, and appropriate combinations of the effects of normal and accident conditions and the effects of natural phenomena.

Path Forward: The guidance in the aforementioned documents should be consulted.

Chapter 3: Hazard and Accident Analyses

Comment 3-C1: For the hazard of waste container over-pressurization listed in Table 3.3-1, the preventive engineered control is required under OUT-9 and RH-6, but not required under HLWSS-8.

Basis: To assure whether the preventive engineered control is needed in HLWSS-8 to prevent the potential risk of deflagration (at unloading) due to hydrogen generation in canisters or overpacks during long-term storage.

Path Forward: Explain in the DSA why the preventive engineered control is not required under HLWSS-8. If required, add the control under HLWSS-8 of Table 3.3-1.

Comment 3-C2: For the hazard of loss of active ventilation listed in Table 3.3-1, the preventive engineered control is required under MP-15 to prevent loss of airborne contamination confinement, but not required under MPA-14 and OUT-18.

Basis: To assure whether the preventive engineered control is needed under MPA-14 and OUT-18 to further prevent the negative end scenarios such as loss of all exhaust blowers servicing CSRF or loss of container integrity.

Path Forward: Explain in the DSA why the preventive engineered control is not required under MPA-14 and OUT-18. If required, add the control under MPA-14 and OUT-18 of Table 3.3-1.

Comment 3-C3: Justifications with details for risk assessment results (Table 3.3-4) need to be provided.

Basis: The DSA considered both (i) design basis approach using codes and standards and (ii) risk approach considering probability (frequency) and dose consequences. A large number of supporting documents are quoted for the summary made in this report. Therefore, it is difficult

to understand the extent in using the two approaches, and bases for determining probabilities and consequences.

Path Forward: The DSA needs a summary of the bases of Table 3.3-4, including the consideration of the design basis approach.

Chapter 4: Safety Structures, Systems, and Components

No comments.

Chapter 5: Derivation of Technical Safety Requirements

No comments.

Chapter 6: Prevention of Inadvertent Criticality

Comment 6-C1: There is no complete description of the contents that will be loaded into the multi-purpose canister (MPC) storage canisters.

Basis: Reviewers need to understand the material that will be loaded into the MPC to be able to make a finding on its criticality safety.

Path Forward: Provide a description of the contents that will be loaded into the MPC including amount of fissile material, nuclides and other materials present that may act as a moderator as well as the geometry of all materials.

Comment 6-C2: There is no criticality analysis of the contents within the MPC.

Basis: The reviewer makes criticality safety findings based on calculations that demonstrate that storage packages are subcritical.

Path Forward: Perform a calculation demonstrating that the MPC contents are subcritical. Guidance for how the staff reviews this type of calculation is in Chapter 8 of NRC's standard review plan, NUREG-1567, "Standard Review Plan for Spent Fuel Dry Storage Facilities" (http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1567/sr1567.pdf).

Chapter 7: Radiation Safety

Comment 7-C1: There is no complete description of the source term that will be loaded into the MPC storage canisters.

Basis: A description of the source term to understand the material that will be loaded into the MPC is required to be able to make a finding that the MPC meets shielding and radiation protection regulations.

Path Forward: Provide a description of the neutron and gamma source terms that will be loaded into the MPC.

Comment 7-C2: There is no shielding analysis of the contents within the transfer cask or storage MPC.

Basis: The calculated site boundary dose and surface dose rates on the transfer cask and storage overpack are used to determine if the system and its contents meet radiological safety regulations.

Path Forward: Perform a shielding analysis calculating transfer cask and storage overpack dose and dose rates. Guidance for how the staff reviews this type of calculation is in Chapter 7 of NRC's standard review plan, NUREG-1567, "Standard Review Plan for Spent Fuel Dry Storage Facilities" (http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1567/sr1567.pdf).

Comment 7-C3: There is no radiation protection evaluation.

Basis: This information is needed to determine if the system and its contents meet radiation protection regulations.

Path Forward: Provide information related to radiation protection such as operational procedures for loading and estimate of occupational doses during transfer cask operations. Guidance for how the staff reviews this evaluation is in Chapter 11 of NRC's standard review plan, NUREG-1567, "Standard Review Plan for Spent Fuel Dry Storage Facilities" (http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1567/sr1567.pdf).

Chapter 8: Hazardous Material Protection

No comments.

Chapter 9: Radioactive and Hazardous Waste Management

No comments.

Chapter 10: Initial Testing, In-Service Surveillance, and Maintenance

See editorial comments below.

Chapter 11: Occupational Safety

See editorial comments below.

Chapter 12: Procedures and Training

See editorial comments below.

Chapter 13: Human Factors

No comments.

Chapter 14: Quality Assurance

General Comment 14-C1: The review of multiple sections of the of WVNS-DSA-001 and comparison to and review of associated documents (WVDP-111, Revision 16, CH2M Hill – B&W West Valley, LLC Quality Assurance Program and CH2M Hill – B&W West Valley LLC Quality Assurance Program for High Level Waste Relocation and Storage has provided typical information showing the responsibilities and structure for the control of nuclear quality assurance activities. While some variances in structure from a strictly 10 CFR Part 72 approach exist, they are minor and still appear to be robust enough to control the necessary quality aspect of the program activities. With most quality programs, full implementation will be necessary to achieve adequate control and quality results.

See editorial comments below.

Chapter 15: Emergency Preparedness Program

No comments.

Chapter 16: Provisions for Decontamination and Decommissioning

No comments.

Chapter 17: Management, Organization & Institutional Safety Provisions

See editorial comments below.

West Valley Demonstration Project Technical Safety Requirements

Comment TSR-C1: The technical safety requirements document has none of the procedures contained in standard technical specifications.

Basis: Technical specifications for dry cask storage systems are intended to be a clear and consistent set of procedures that identify: 1) approved contents; 2) limiting conditions for operation and applicability; 3) surveillance requirement and applicability (e.g., fuel integrity; cask integrity, and cask criticality control program); 4) design features (e.g., design features significant to safety; codes and standards; structural performance; and cask handling/canister transfer facility); and 5) administrative controls. These details in the dry cask technical specifications will assure the overall safety goals for dry cask storage are met, including maintaining subcriticality, controlling radiation dose to the workers and the public, and maintaining the confinement barriers. NUREG-1745 “Standard Format and Content for Technical Specifications for 10 CFR Part 72 Cask Certificates of Compliance,” provides guidance on the format and level of detail expected in technical specifications.

Path Forward: Provide information related to technical specifications. Guidance for how the staff reviews technical specifications is documented in NUREG-1745 “Standard Format and Content for Technical Specifications for 10 CFR Part 72 Cask Certificates of Compliance”.

Editorial Comments

Executive Summary (WVNS-DSA-001)

Comment ES-EC1: The last sentence in "E.3 Facility Hazard Categorization" references a summary of specific facility hazard categories in Section 3.3.2.2. There is no summary in the cited section.

Bases: To allow for completeness and accuracy of information.

Path Forward: Provide a summary of specific facility hazard categories in Section 3.3.2.2.

Chapter 1: Site Characteristics

Comment 1-EC1: Second to the last sentence in Section 1.3.1 Geography, begins with "As previously stated" and continues to state that, "the hazards at the WVDP do not have the potential to cause off-site consequences of concern." This was not previously stated in this document (i.e., WVNS-DSA-001, Rev. 17, Draft B).

Basis: To allow for completeness and accuracy of information.

Path Forward: Insert the text or provide reference to the discussion of the hazards at the WVDP.

Comment 1-EC2: In the first sentence in the last paragraph of Section 1.4.1.1 on page 31 of 462 remove the period after the word "inches".

Basis: Grammatical correction.

Path Forward: Remove the period after the word "inches".

Comment 1-EC3: In the third sentence in the first paragraph and first sentence in the second paragraph of Section 1.4.4.6 on page 41 of 462 the "b" in mb should be a subscript (i.e., m_b).

Basis: Grammatical correction.

Path Forward: Insert subscript.

Comment 1-EC4: Section 1.7, eighth and ninth paragraphs has several places where "Route" is missing from the text.

Basis: Grammatical correction.

Path Forward: Insert "Route" in the text.

Chapter 2: Facility Description

Comment 2-EC1: This editorial comment references the 3rd paragraph from the bottom of Section 2.4.5.4 on page 101. In the last sentence, change "Table 3" to read "Table 2.4-6."

Basis: There was no Table 3 for the principal physical design parameters of the VSC.

Comment 2-EC2: This editorial comment references the 3rd paragraph from the bottom of Section 2.5.3.3 on page 118. Revise, as appropriate, the statement, "In the cask preparation area of LI/LO, the two cask lid gaskets will be installed and inspected …The steel and concrete VSC lid will then be bolted and torqued to final design specified value," by recognizing that seal/gasket and associated material specifications should also be added to Table 2.4-6 also as a principal design parameter of the HLW VSC for the full service life of 50 years.

Basis: It is unclear what safety functions the seal and gasket are to perform for the full 50 year service life. The material specifications should also be listed in Table 2.4-6 as a basis for engineered preventive control presented in Table 3.3-1, Hazard Evaluation.

Comment 2-EC3: This editorial comment references the 2nd paragraph from the bottom of Section 2.5.3.3 on page 118. Revise, as appropriate, the statement, "The lift height of the VSC is limited by VSC design to remain below the expected maximum lift height of 6 inches," by recognizing that "Preventive Administrative" control should be in place to ensure a maximum lift height of equal or less than 6 inches.

Basis: The sketch in Figure 2.4-39, Cask Transfer, depicts a design lift height limit of 2'-0". Thus, the cask lift height should be placed under Preventive Administrative control.

Comment 2-EC4: In Section 2.4.5.1 MPPB is used but not defined in the List of acronyms and abbreviations. In the same section the word selected is misspelled (i.e., "sleected"). In Section 2.4.5.3, "TABLE" is in all caps.

Basis: To allow for completeness and accuracy of information.

Path Forward: Correct typos and address other editorial comments.

Comment 2-EC5: In the last sentence of the first paragraph of Section 2.4.5.4 Table 3 should be Table 2.4-6 (maybe)? In the second to the last sentence in the second paragraph there are two typos.

Basis: To allow for completeness and accuracy of information.

Path Forward: Correct typos.

Comment 2-EC6: There are several typos on page 115 of 462: for example, "that that" in the second sentence of the second paragraph; in the fourth paragraph, fifth sentence "astorage" and the last word on the page "f". LI/LO has been used but not defined. The last paragraph on page 117 of 462 also has a number of typos; for example, "ni", "perofmed", and "Follwing". On the same page there is a sentence structure issue "to the are in the".

Basis: To allow for completeness and accuracy of information.

Path Forward: Correct typos and define undefined terms.

Chapter 3: Hazard and Accident Analyses

No additional comments.

Chapter 4: Safety Structures, Systems, and Components

No comments.

Chapter 5: Derivation of Technical Safety Requirements

No comments.

Chapter 6: Prevention of Inadvertent Criticality

No additional comments.

Chapter 7: Radiation Safety

No additional comments.

Chapter 8: Hazardous Material Protection

No comments.

Chapter 9: Radioactive and Hazardous Waste Management

No comments.

Chapter 10: Initial Testing, In-Service Surveillance, and Maintenance

Comment 10-EC1: Section 10.4 “In-Service Surveillance Program,” page 405, 1st paragraph; the acronym “NIST” is not included in the list of acronyms and abbreviations.

Basis: For proper recognition and understanding all acronyms and their meanings should be included in the list of acronyms and abbreviations.

Path Forward: Add the acronym “NIST” to the list of acronyms and abbreviations.

Comment 10-EC2: Section 10.4 “In-Service Surveillance Program,” page 405, 2nd paragraph, the first time use of a reference “WV-108 and WV-109” should include the proper title as well as the numeric identifier, if there is one.

Basis: The first time use of a reference “WV-108 and WV-109” should include the proper title as well as the numeric identifier, if there is one. One without the other provides less relevance to the subject text and may cause misunderstanding or confusion.

Path Forward: Add: full title at first use = WV-109, Instrument Data and Recall Tracking System and WV-108, Preventive and Predictive Maintenance and Recurring Task System.

Comment 10-EC3: Section 10.4 “In-Service Surveillance Program,” page 405, 3rd paragraph, the first time use of a reference “M&TE” should be spelled out in the text of the document.

Basis: To allow for clarity and understanding the use of an acronym should also include what the acronym stands for.

Path Forward: Spell out the acronym “M&TE” at first use = Maintenance and Test Equipment.

Chapter 11: Occupational Safety

Comment 11-EC1: Section 11.3 “Conduct of Operations,” page 408, 3rd bullet, the number listed “15.4.4.1” is an incorrect reference.

Basis: The proper reference is 15.4.4.2

Path Forward: Correct the reference number.

Comment 11-EC2: Section 11.4.4.1.3 “RHWF Fire Detection System,” page 414, 2nd paragraph, the acronym “FACP” is not included in the list of acronyms and abbreviations.

Basis: For proper recognition and understanding all acronyms and their meanings should be included in the list of acronyms and abbreviations.

Path Forward: Add the acronym “FACP” to the list of acronyms and abbreviations.

Comment 11-EC3: Section 11.4.4.1.5.5 “Special Detection Systems,” page 416, 1st paragraph, the acronym “CAFSS” is not included in the list of acronyms and abbreviations.

Basis: For proper recognition and understanding all acronyms and their meanings should be included in the list of acronyms and abbreviations.

Path Forward: Add the acronym “CAFSS” to the list of acronyms and abbreviations.

Comment 11-EC4: Section 11.4.4.1.5.7 “RHWF Fire Suppression Systems,” page 417, 1st paragraph, the reference “NFPA-10” is not included in the list of references.

Basis: For proper recognition and understanding all references should be included in the list of references.

Path Forward: Add the reference “NFPA-10” to the list of references.

Comment 11-EC5: Section 11.4.4.1.5.8 “Lightning Protection,” page 418, 1st paragraph, the reference “UL-96A” is not included on the list of references.

Basis: For proper recognition and understanding all references should be included in the list of references.

Path Forward: Add the reference “UL-96A” to the list of references.

Chapter 12: Procedures and Training

Comment 12-EC1: Section 12.4.1 “Development of Training,” page 422, 1st paragraph, the acronym “OJT” is not included in the list of acronyms and abbreviations.

Basis: For proper recognition and understanding all acronyms and their meanings should be included in the list of acronyms and abbreviations.

Path Forward: Add the acronym “OJT” to the list of acronyms and abbreviations.

Comment 12-EC2: Section 12.4.1.1 “General Training,” page 423, 1st paragraph, the first time use of a reference “ISMS” should be spelled out in the text of the document.

Basis: To allow for clarity and understanding the use of an acronym should also include what the acronym stands for.

Path Forward: Spell out the acronym “ISMS” at first use = Integrated Safety Management System.

Comment 12-EC3: Section 12.4.1.2 “Radiation Worker Training,” page 424, 2nd paragraph, the acronym “PROJT” is not included in the list of acronyms and abbreviations.

Basis: For proper recognition and understanding all acronyms and their meanings should be included in the list of acronyms and abbreviations.

Path Forward: Add the acronym “PROJT” to the list of acronyms and abbreviations.

Chapter 13: Human Factors

No comments.

Chapter 14: Quality Assurance

Comment 14-EC1: 14.1 Introduction, the document noted in the last paragraph of 14.1, “WV-111, Quality Assurance Program,” may not be identified properly. View the document noted in the first line of the first paragraph of 14.2 as a reference.

Basis: For proper recognition, use, and understanding all documents should be properly identified.

Path Forward: Add “DP” to the aforementioned document numerical identifier.

Comment 14-EC2: 14.4 Quality Improvement, the word “assess” in the 4th paragraph is misspelled.

Basis: For clarity and understanding.

Path Forward: Correct the spelling of the word.

Comment 14-EC3: Section 14.4, paragraph on page 434 (435?), “ORPS” is not identified in the list of Acronyms.

Basis: For proper recognition and understanding all acronyms and their meanings should be included in the list of acronyms and abbreviations.

Path Forward: Add the acronym “ORPS” to the list of acronyms and abbreviations.

Comment 14-EC4: 14.6 Quality Assurance Performance, page 434, 1st sentence is missing information/words.

Basis: The sentence does not read properly and could be confusing to the reader.

“This section presents an ~~d~~ overview of the process in place at the WVDP to ensure that work performed at the site meets applicable QA requirements.”

Path Forward: Strike the “d” and add the word “the.”

Comment 14-EC5: 14.6.1 Work Processes, third paragraph, DOE O414.1D, is used for the first time in this document and the title is not included.

Basis: The first time use of a reference should include the proper title. Without the title, the subject text may cause misunderstanding or confusion.

Path Forward: Include document title at first use.

Comment 14-EC6: 14.6.3 Procurement, page 435, 1st paragraph: It appears that this document, “WVDP-111, Quality Assurance Management Manual” is either incorrectly numbered or incorrectly titled.

Basis: The document “WVDP-111, Quality Assurance Program” exists earlier in the document text and the reference list identifies that numerical identifier as the QA Program not the manual.

Path Forward: Correct either the numbering or the title.

Chapter 15: Emergency Preparedness Program

No comments.

Chapter 16: Provisions for Decontamination and Decommissioning

No comments.

Chapter 17: Management, Organization & Institutional Safety Provisions

Comment 17-EC1: Section 17.3 “Organizational Structure, Responsibilities and Interfaces,” page 455, 1st paragraph, the acronym “EM” is not included in the list of acronyms and abbreviations.

Basis: For proper recognition and understanding all acronyms and their meanings should be included in the list of acronyms and abbreviations.

Path Forward: Add the acronym “EM” to the list of acronyms and abbreviations.

Comment 17-EC2: Section 17.3.2 “Organizational Responsibilities,” page 456, Description for Nuclear Operations and Storage, the acronym “NOS” is not included in the list of acronyms and abbreviations.

Basis: For proper recognition and understanding all acronyms and their meanings should be included in the list of acronyms and abbreviations.

Path Forward: Add the acronym “NOS” to the list of acronyms and abbreviations.

Comment 17-EC3: Section 17.4.4 “Safety Culture,” page 458, 1st paragraph, the use of the referenced acronym “SMS” has already been used and has a different meaning on the acronym list.

Basis: To allow for clarity and understanding the use of an acronym should have a single meaning.

Path Forward: Determine a single use “SMS” and include it on the acronym list if not already included. Develop another acronym if necessary for WVDP Waste Management System or for Sludge Mobilization System and include it on the acronym list.