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Final Report – Scenario Disposition

SPENT FUEL POOL PHYSICAL INSPECTION

Search for Unaccounted For A-49 Fuel Rod Segments and Other Special Nuclear Material

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Final Report – Scenario Disposition

SPENT FUEL POOL PHYSICAL INSPECTION

Search for Unaccounted For A-49 Fuel Rod Segments and Other Special Nuclear Material (SNM)

1.0 EXECUTIVE SUMMARY

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The Spent Fuel Pool (SFP) Physical Inspection considers whether any or all of the three unaccounted for 18-inch Humboldt Bay Power Plant (HBPP) fuel rod segments associated with fuel assembly A-49 remain stored in the Unit 3 SFP in an undocumented location or item. The various SFP locations and items considered the A-49 rod seaments to be in one (or more) of three possible physical configurations: (A) intact A-49 fuel rod segments, (B) damaged A-49 fuel rod segments (broken, crushed, or cut but identifiable as from A-49), or (C) A-49 fuel rod segments in a canister. In addition to the specific search for the A-49 fuel rod segments, the search also included the identification of other potential fuel (in the form of fuel fragments not specifically identified as being from A-49) and non-fuel SNM found during the physical inspection (Physical Configuration D).

A Physical Inspection Plan established a comprehensive list of discrete locations and items in the SFP that were capable of physically accommodating the three A-49 fuel rod segments or the canister holding the segments. The Plan recognized earlier inspections conducted prior to the formation and implementation of the SNM Inventory, Inspection & Control Project (hereafter "SNM Project"), and the fuel assembly inspection activities of 2000 associated with pre-ISFSI activities. The Plan was implemented in a meticulous and thorough manner. The planned objectives for each inspection were satisfied.

The inspections are listed, defined, and each SFP location or item is specified in Attachment 1, Spent Fuel Pool Physical Inspection Scenario Descriptions to this report. The inspections of the locations and items are summarized and documented in Attachment 2, Spent Fuel Pool Physical Inspection Results. In general, the inspection locations were accessible, ensuring complete and conclusive results based on visual inspection or radiation dose assessment. In some cases, a portion of the item or location being inspected was accessible, but was partially obscured or equipment was not available to fully assess the location or item. In those cases, further discussion and justification was provided. For those items and locations that could not be dispositioned, action items were identified.

Based *solely* on the results of the *physical inspection* of the SFP, all 56 SFP physical inspection scenarios were dispositioned as "Highly Unlikely"¹. The subject A-49 fuel rod segments are not currently stored in the locations or items listed in Project Instruction SAP8065936-PI-02, *Physical Inspections*, specifically the *HBPP Spent Fuel Pool Global Inspection Plan – Areas or items for Inspection* (Global Search Plan or Plan). However, based on the possible physical configurations of the subject A-49 fuel rod segments, the following can be concluded with regard to the three unaccounted for 18-inch fuel rod segments associated with fuel assembly A-49 and other SNM (fuel and non-fuel):

- For Physical Configurations A and C, it is "Highly Unlikely"¹ that any of the Plan locations and items contain the subject A-49 segments
- For Physical Configuration B, it is "Reasonably Possible" that one or more of the Plan locations and items specifically contain fuel fragments that may be associated with the subject A-49 segments
- For Physical Configuration D, it was confirmed that one or more of the Plan locations and items contained fuel fragments and other SNM (non-fuel).

With regard to Physical Configuration D, it is "Reasonably Possible" that all or some of the three A-49 fuel rod segments and their remnants may still be in the SFP as fragments *rather than* segments. Indeed, a number of the fuel fragments associated with Physical Condition D may in fact be from the A-49 fuel rod segments and the remnants thereof. This possibility is based on the observation that some fuel rod fragments found in the spent fuel pool during the physical inspection activities exhibit various characteristics that are indicative of the three unaccounted for A-49 fuel rod segments and their remnants.

2.0 DESCRIPTION

Members of the SNM Project assessed and evaluated the SFP in order to develop a thorough and comprehensive plan to ensure that all areas of the SFP would be identified and examined with regard to the A-49 fuel rod segments. The evaluation resulted in the identification of 56 discrete locations and items in the SFP, when taken together, address the entire SFP. The locations and items are referred to as scenarios. The scenarios for each of these locations and items

¹ Three categories of possibility were considered: "Highly Unlikely" means the event is very improbable. "Possible, But Not Likely" means the event, while possible, would have a fairly low probability of occurrence. "Reasonably Possible" means the event may have occurred.

postulated that the three unaccounted for fuel rod segments remain stored in the HBPP Unit 3 SFP in an undocumented SFP location. Each of the locations and items is identified, described, and located within the SFP in Attachment 1. Spent Fuel Pool Physical Inspection Scenario Descriptions. na han tersen an ¹17 an an an an airtean an Allena. Ta tha an tersen an tersen an an an tersen an ters

Even though the available documentation indicates that the last known location of the unaccounted for A-49 fuel rod segments was in a cylindrical canister, it was recognized that the rod segments could have been removed from the canister, were possibly damaged (broken, crushed, cut), or may have been transferred to another container. In order to ensure that the physical inspection of the SFP did not overlook these possible configurations for the A-49 fuel rod segments, a set of physical configurations were established to define potential configurations of the segments.

The physical configurations considered the A-49 rod segments to be in any one of three possible configurations: (A) intact A-49 fuel rod segments (approximately 18"), (B) damaged A-49 fuel rod segments (i.e., cut, crushed, or broken but identifiable as from A-49 (less than approximately 18", i.e., fragments)), or (C) A-49 fuel rod segments in a canister (approximately 18" segments in a nominal 1-1/2", schedule 40 pipe section w/screwed caps). In addition to the search specifically for the A-49 fuel assembly fuel rod segments, the search also included the identification of other potential fuel (in the form of fuel rod fragments) and non-fuel SNM found during the physical inspection (Physical Configuration D).

The 56 scenarios and the four (4) Physical Configurations were combined to develop a Global Search Plan (Project Inspection SAP8065936-PI-02) that considered those locations that could accommodate the three unaccounted for fuel rod segments, several smaller lengths of the rod segments, and/or their storage receptacle. The Plan provided a comprehensive summary document of all aspects associated with the physical inspection of the SFP. The Plan recognized earlier inspections conducted prior to the development and implementation of the SNM Project. The Plan was initially approved on November 2, 2004. The results and disposition of the 56 scenarios identified in the Global Search Plan are discussed in Attachment 2, Spent Fuel Pool Physical Inspection Results.

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To ensure a meticulous and comprehensive assessment of the physical inspection of the SFP, the SNM Project implemented the Global Search Plan of the SFP between November 2004 and April 2005. Members of the SNM Project supported by Engineering, Operations, and Site Radiation Protection performed the inspections outlined in the Plan. The inspections are listed, defined, and located in Attachment 1 to this report. All SFP items and locations are discussed in detail and have been dispositioned in Attachment 2.

The inspections were performed using underwater cameras. Most inspections were recorded on digital video disks (DVD). In some instances, a radiation dose assessment was more appropriate to disposition a specific scenario due to accessibility issues. DVDs generated during the inspections showed the presence of a silt layer and debris on both the floor of the SFP and on the spent fuel storage rack structures. The silt and debris accumulated under the edges of the racks over the years was mostly from fuel assembly cleaning, reconstitution campaigns, and processing activities associated with radioactive waste disposal. Dirt and dust not collected by the SFP purification system created layers on the SFP floor areas. This powdery debris would ascend and appear smoke-like in the water when disturbed. This debris was also examined for the presence of fuel rod segments, fuel fragments, pellets, or other SNM (fuel and nonfuel).

4.0 ANALYSIS

Attachment 1 provides a summary of the 56 scenarios addressed in the Global Inspection Plan. Each of the scenarios is listed, defined, and each SFP location or item is specified in Attachment 1 to this report. Figure 1, *HBPP Unit 3 Spent Fuel Pool Schematic Configuration for Physical Inspections* generically depicts the SFP configuration for the various locations and items for the majority of the inspections.

Attachment 2 provides an individual summary of the SFP physical inspection objective, process, results and conclusion associated with each scenario. DVDs have been retained and are indexed and filed separately.

The physical inspections were completed as identified in the Global Search Plan. The three unaccounted for fuel rod segments and/or the canister were not located. However, a number of fuel rod fragments (clad and unclad) were found, that have been videotaped, categorized, characterized, and stored.

The Plan addressed storage of the unaccounted for fuel rod segments in the Unit 3 SFP, intact (whole), damaged (cut, crushed, or broken), or in a storage canister. The inspection team found no basis to assume the three fuel rod segments would be cut into smaller pieces. However, the subject segments could have been damaged or broken resulting in fuel fragments that had the segments as their parent source. Accordingly, scenarios involving shorter rod segments were deemed "Reasonably Possible." Therefore, locations where smaller segments (i.e., fuel fragments) of the rods could be located in the SFP were identified and documented. Specific scenarios provide discussion and address the SNM Project team's conclusion regarding inspection of the SFP for smaller fuel rod segments. The specific analysis of the fuel fragments that have been found in the SFP during the SFP Physical Inspection and their possible relationship to the A-49 fuel rod segments is discussed in a separate scenario.

An absolute determination that the three fuel rod segments, or pieces of them, Eare not in the SFP will not be possible until all 390 fuel assemblies and obstructions are removed from the SFP. This includes the clean up and identification of all debris. Although the Global Search Plan addressed every area the SNM Project team considered plausible, some unlikely places were not completely searched due to the low likelihood of the fuel rod segments being there and because a significant personnel radiation exposure would be associated with the inspection. For example, a small portion of an unaccounted for fuel rod segment could possibly be lodged in one of the 390 fuel assemblies. To disassemble each and every assembly to make the determination versus what was inspected (signs of rework on the top of the bundle) would require a huge effort and associated radiation exposure.

5.0 CONCLUSION

The three intact unaccounted for fuel rod segments and/or the canister with the three fuel rod segments were not located within the SFP locations as outlined in the Global Search Plan and defined as Physical Configurations A and C.

Based on the results of the inspection, the three fuel rod segments for two of the three Physical Configurations are not stored in the SFP as defined and listed in the "HBPP Spent Fuel Pool Global Inspection Plan - Areas or Items for Inspection," and as delineated in Attachment 1. These two physical configurations are the intact A-49 fuel rod segments and the A-49 fuel rod segments in the canister, Physical Configurations A and C, respectively.

However, with regard to Physical Configurations B and D, it is "Reasonably Possible" that all or some of the three A-49 fuel rod segments and their remnants may still be in the SFP as fragments rather than segments. Indeed, a number of the fuel fragments associated with Physical Condition D may in fact be from the A-49 fuel rod segments and the remnants thereof. This possibility is based on the observation that some fuel rod fragments found in the spent fuel pool during the physical inspection activities exhibit various characteristics that are indicative of the three unaccounted for A-49 fuel rod segments and their remnants.

The subject fuel fragments found during the implementation of the Global Search Plan were identified, measured, characterized, categorized, and evaluated. These fragments were collected and are currently stored in one of two special containers (designated as the Fuel Fragment Storage Container and the Unclad Fuel Fragment Storage Container) located in the SFP. The fragments have been captured on video and tallied in PG&E Calculation NX-288². Prior to this physical inspection and relocation campaign, the vast majority of the 175 fuel fragments were found in the Central Storage Container (CSC) in the SFP. Historically, the

² PG&E Calculation NX-288, Documentation of Spent Fuel Fragments, Revision 6, April 21, 2005

CSC was utilized as the primary repository for fuel fragments and other small radioactive items found in the SFP. During the search for A-49 fuel rod segments during 2004 - 2005, five (5) fragments were found in Failed Fuel Can #1 (FFC #1), one (1) in the SFP sump, one (1) on the floor of the SFP, and eight (8) in the original container that housed damaged fuel assembly UD6N.

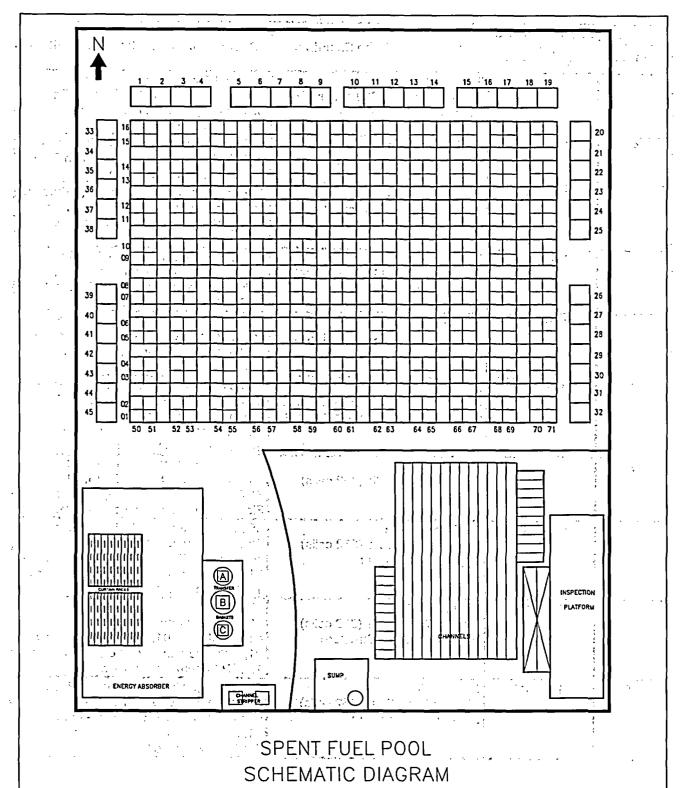
6.0 **RECOMMENDATION**

No additional physical inspections are recommended. However, the action items identified for specific scenarios will be completed in the future during decommissioning activities for HBPP Unit 3.

7.0 REVIEW & APPROVAL

Inspection I Prepared B	Report y: <u>Christopher Kudla</u>	Date05/06/05
Review:	Peter Rasmussen	Date05/18/05
Approval:	Bruce Norton Project Manager	Date05/18/05

Figure 1



HBPP UNIT 3 SPENT FUEL POOL SCHEMATIC CONFIGURATION FOR PHYSICAL INSPECTIONS

Attachment 1

Area/ Item No.	SNMP Scenario No. SAP8065936	Area or Item to be Examined	Description & Location of Area/Item
1	1-04-01a	Fuel Rack Area Fuel Assemblies (389 assemblies, does <u>not</u> include UD6N)	389 Fuel Assemblies located in the Peripheral Cells and the Storage Rack Cells as depicted on Figure 1, SFP Schematic Diagram.
2	1-04-01b	Fuel Rack Area Peripheral Cells (45 cells)	45 Peripheral Cells noted as locations 1 – 45, inclusive and as depicted on Figure 1, SFP Schematic Diagram.
3	1-04-01c	Fuel Rack Area Peripheral Cells (45 cells) Upper Rack Structure	45 Peripheral Cells Upper Rack Structure noted as locations 1 – 45, inclusive and as depicted on Figure 1, SFP Schematic Diagram.
4	1-04-01d	Fuel Rack Area Peripheral Cells (45 cells) Middle- Tier Rack Structure	45 Peripheral Cells Middle-Tier Rack Structure noted as locations 1 – 45, inclusive and as depicted on Figure 1, SFP Schematic Diagram.
5	1-04-01e	Fuel Rack Area Peripheral Cells (45 cells) Lower Rack Structure	45 Peripheral Cells Lower Rack Structure noted as locations $1 - 45$, inclusive and as depicted on Figure 1, SFP Schematic Diagram.
6	1-04-01f	Fuel Rack Area Peripheral Cells (45 cells) Between Cells and SFP Walls (North, East & West)	Areas of the Peripheral Cells Between Cells and SFP Walls (North, East & West) noted as locations $1 - 45$, inclusive and as depicted on Figure 1, SFP Schematic Diagram.
7	1-04-01g	Fuel Rack Area Storage Rack Cells (352 cells)	352 Storage Rack Cells bounded by the grid coordinates 50-01, 50-16, 71-16 and 71-01, inclusive and as depicted on Figure 1, SFP Schematic Diagram.
8	1-04-01h	Fuel Rack Area Storage Rack Cells (352 cells) Upper Rack Structure	352 Storage Rack Cells Upper Rack Structure bounded by the grid coordinates 50-01, 50-16, 71-16 and 71- 01, inclusive and as depicted on Figure 1, SFP Schematic Diagram.
9	1-04-01i	Fuel Rack Area Storage Rack Cells (352 cells) Middle-Tier Rack Structure	352 Storage Rack Cells Middle-Tier Rack Structure bounded by the grid coordinates 50-01, 50-16, 71-16 and 71- 01, inclusive and as depicted on Figure 1, SFP Schematic Diagram.
10	1-04-01j	Fuel Rack Area Storage Rack Cells (352 cells) Lower Rack Structure	352 Storage Rack Cells Lower Rack Structure bounded by the grid coordinates 50-01, 50-16, 71-16 and 71- 01, inclusive and as depicted on Figure 1, SFP Schematic Diagram.

Attachment 1

SPENT FUEL POOL (SFP) PHYSICAL INSPECTION SCENARIO DESCRIPTIONS

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Area/	SNMP Scenario No.	Area or Item to be Examined	Description & Location of Area/Item
Item No.	SAP8065936		
11	1-04-01k	Fuel Rack Area Storage Rack Structure Between Storage Rack Cells and Peripheral Cells	Areas between the Storage Rack Cells (bounded by the grid coordinates 50-01, 50-16, 71-16 and 71-01, inclusive) and the Peripheral Cells (noted as locations 1 - 45, inclusive) as depicted on Figure 1, SFP Schematic Diagram.
12	1-04-011	Fuel Rack Area Gap – Boral Can & Cell (389 cells)	The gap space between the outside surface of the fuel assembly Boral can and the inside surface of the fuel rack cell in order to determine if the gap is wide enough to accommodate a fuel rod segment or fragment.
13	1-04-01m	Fuel Rack Area Vertical Pipes (Part of the Storage Rack Cells) Between East and West Sections of the Storage Rack Cells	The two (2) vertical pipes located between the Storage Rack Cells between columns 59 and 60, with one between row 4 and 5 and the other between rows 12 and 13 (grid is depicted on Figure 1, SFP Schematic Diagram).
14	1-04-02a	Liner General Area Fuel Rack Area Floor - General	The Fuel Rack Floor area bounded by the grid coordinates 50-01, 50-16, 71-16 and 71-01 and Peripheral Cell Racks 1 - 45, inclusive and as depicted on Figure 1, SFP Schematic Diagram.
15	1-04-02b	Liner General Area Cask Pit Area Floor - General	The Cask Pit Floor area as depicted on Figure 1, SFP Schematic Diagram.
16	1-04-02c	Liner General Area Energy Absorber Area Floor - General	The Energy Absorber Floor area as depicted on Figure 1, SFP Schematic Diagram.
17	1-04-02d	Liner General Area SFP Sump	The SFP Sump located in the Cask Pit Floor area as depicted on Figure 1, SFP Schematic Diagram.
18	1-04-02e	Liner General Area SFP Sump Drain Line	The SFP Sump Drain Line is attached to the SFP Sump that is located in the Cask Pit Floor area (depicted on Figure 1, SFP Schematic Diagram).
19	1-04-02f	Liner General Area SFP Skimmer Pipes	The SFP Skimmer Pipes located along the north wall of the SFP as depicted on Figure 1, SFP Schematic Diagram.
20	1-04-02g	Liner General Area SFP Suction Piping, Foot Valve & Discharge Piping (SFP Recirculation)	The SFP Suction piping and valves located in the northeast corner and Discharge piping located in the northwest and southwest corners (SFP depicted on Figure 1, SFP Schematic Diagram).

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Attachment 1

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Area/ Item No.	SNMP Scenario No. SAP8065936	Area or Item to be Examined	Description & Location of Area/Item
21	1-04-02h	SFP Liner & Wall Juncture (Corner	The SFP Liner & Wall Juncture (Corner Areas – 4 Locations) located in the northeast, southeast, southwest and northwest corners of the SFP as depicted on Figure 1, SFP Schematic Diagram.

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Attachment 1

Area/ Item No.	SNMP Scenario No. SAP8065936	Area or item to be Examined	Description & Location of Area/Item
22	1-04-02i	Liner General Area Fuel Transfer Basket Rack Area - General	The Fuel Transfer Basket Rack Area – General located in the southwest portion of the SFP as depicted on Figure 1, SFP Schematic Diagram.
23	1-04-03a	Containers ISC – 1 - Red	The Interim Storage Container (ISC) designated by the red colored identification tag and marked with the numeral 1 that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).
24	1-04-03b	Containers ISC – 2 - Blue	The Interim Storage Container (ISC) designated by the blue colored identification tag and marked with the numeral 2 that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).
25	1-04-03c	Containers ISC – 3 - Green	The Interim Storage Container (ISC) designated by the green colored identification tag and marked with the numeral 3 that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).
26	1-04-03d	Containers ISC – 4 - Yellow	The Interim Storage Container (ISC) designated by the yellow colored identification tag and marked with the numeral 4 that is located on the Energy Absorber (depicted on Figure 1, SFP Schematic Diagram).
27	1-04-03e	Containers ISC – 5 - Brown	The Interim Storage Container (ISC) designated by the brown colored identification tag and marked with the numeral 5 that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).
28	1-04-03f	Containers ISC6 - Orange The set of the	The Interim Storage Container (ISC) designated by the orange colored identification tag and marked with the numeral 6 that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).
29	1-04-03g	Containers ISC – 7 - Pink	The Interim Storage Container (ISC) designated by the pink colored identification tag and marked with the numeral 7 that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).

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Attachment 1

Area/ Item No.	SNMP Scenario No. SAP8065936	Area or Item to be Examined	Description & Location of Area/Item
30	1-04-03h	Containers ISC – 8 - Purple	The Interim Storage Container (ISC) designated by the purple colored identification tag and marked with the numeral 8 that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).
31	1-04-03i	Containers ISC – 9 – Red/White	The Interim Storage Container (ISC) designated by the two-tone red/white colored identification tag and marked with the numeral 9 that is located on the Energy Absorber (depicted on Figure 1, SFP Schematic Diagram).
32	1-04-03j	Containers ISC – 10 – Blue/White	The Interim Storage Container (ISC) designated by the two-tone blue/white colored identification tag and marked with the numeral 10 that is located on the Energy Absorber (depicted on Figure 1, SFP Schematic Diagram).
33	1-04-03k	Containers ISC – 11 – Green/White	The Interim Storage Container (ISC) designated by the two-tone green/white colored identification tag and marked with the numeral 11 that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).
34	1-04-031	Containers ISC – 12 – Yellow/White	The Interim Storage Container (ISC) designated by the two-tone yellow/white colored identification tag and marked with the numeral 12 that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).
35	1-04-03m	Containers ISC – 13 – Brown/White	The Interim Storage Container (ISC) designated by the two-tone brown/white colored identification tag and marked with the numeral 13 that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).
36	1-04-03n	Containers ISC – 14 – Orange/White	The Interim Storage Container (ISC) designated by the two-tone orange/white colored identification tag and marked with the numeral 14 that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).

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Area/ Item No.	SNMP Scenario No. SAP8065936		
37	1-04-030	Containers ISC – 15 – Pink/White	The Interim Storage Container (ISC) designated by the two-tone pink/white colored identification tag and marked
· · ·			with the numeral 15 that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).

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Attachment 1

Area/ Item No.	SNMP Scenario No. SAP8065936	Area or Item to be Examined	Description & Location of Area/Item
38	1-04-03p	Containers ISC – 16 – Purple/White	The Interim Storage Container (ISC) designated by the two-tone purple/white colored identification tag and marked with the numeral 16 that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).
39	1-04-03q	Containers Fuel Transfer Basket A & Under Basket	The Fuel Transfer Basket A area located in the southwest portion of the SFP as depicted on Figure 1, SFP Schematic Diagram.
40	1-04-03r	Containers Fuel Transfer Basket B & Under Basket	The Fuel Transfer Basket B area located in the southwest portion of the SFP as depicted on Figure 1, SFP Schematic Diagram.
41	1-04-03s	Containers Fuel Transfer Basket C & Under Basket	The Fuel Transfer Basket C area located in the southwest portion of the SFP as depicted on Figure 1, SFP Schematic Diagram.
42	1-04-03t	Containers UD6N Fuel Assembly Box (including contents)	The UD6N Fuel Assembly Box located in Peripheral Rack Cell 32 as depicted on Figure 1, SFP Schematic Diagram. The "old" UD6N container is on the east inspection platform.
43	1-04-03u	Containers Failed Fuel Cans (4)	Failed Fuel Cans $(1 - 4)$ are currently known as the Storage Containers $1 - 4$. One of the four cans in the SFP has been filled with cut-up incore detectors and the other three remaining cans are empty
44	1-04-03v	Containers Central Storage Container (CSC) (Unclad Fuel Fragment Container (UFFC) & Fuel Fragment Container (Fuel Frag))	The Central Storage Container (CSC) that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram). In addition there are two other containers – UFFC & Fuel Frag that hold the clad and unclad fuel fragments that have been found in the SFP.
45	1-04-03w	Containers Pellet Catcher	The Pellet Catcher that is located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).

Attachment 1

Area/ Item No.	SNMP Scenario No. SAP8065936	Area or Item to be Examined	Description & Location of Area/Item
46	1-04-03x	Containers Transitory ISCs	Inspect the Transitory Interim Storage Containers (ISC) designated by the two- tone red/black colored identification tag and marked with the numeral 17, the two-tone blue/black colored identification tag and marked with the numeral 18, the two-tone green/black colored identification tag and marked with the numeral 19, and the two-tone yellow/black colored identification tag and marked with the numeral 20 that are all located in the Cask Pit/Channel area (depicted on Figure 1, SFP Schematic Diagram).
47	1-04-04a	Miscellaneous Poison Curtain Rack 1 & Under Rack	Poison Curtain Rack 1 (Slots 1 – 60) is located on the Energy Absorber as depicted on Figure 1, SFP Schematic Diagram.
48	1-04-04b	Miscellaneous Poison Curtain Rack 2 & Under Rack	Poison Curtain Rack 2 (Slots 61 – 120) is located on the floor area adjacent to the Energy Absorber (depicted on Figure 1, SFP Schematic Diagram).
49	1-04-04c	Miscellaneous Work/Inspection Platform (On, Underneath & Behind) – South Wall	Work/Inspection Platform is located on the South Wall of the SFP (depicted on Figure 1, SFP Schematic Diagram).
50	1-04-04d	Miscellaneous Work/Inspection Platform (On, Underneath & Behind) – East Wall	Work/Inspection Platform is located on the East Wall of the SFP as depicted on Figure 1, SFP Schematic Diagram.
51	1-04-04e	Miscellaneous Energy Absorber (Underneath, Between – West & South Walls & On Top)	Energy Absorber is located on the South Wall of the SFP as depicted on Figure 1, SFP Schematic Diagram.
52	1-04-04f	Miscellaneous Channels (On, Between, Underneath & In)	Channels are stacked on the floor area of the Cask Pit/Channel as depicted on Figure 1, SFP Schematic Diagram.
53	1-04-04g	Miscellaneous Dummy Fuel Assembly	Dummy Fuel Assembly is located in Transfer Basket C (depicted on Figure 1, SFP Schematic Diagram).
54	1-04-04h	Miscellaneous Channel Stripper (On, Behind, Underneath & In)	Channel Stripper is attached to and is located on the south wall of the SFP as depicted on Figure 1, SFP Schematic Diagram.

Attachment 1

Area/ Item No.	SNMP Scenario No. SAP8065936	Area or Item to be Examined	Description & Location of Area/Item
55	1-04-04i	Miscellaneous Resin Bed (On, Behind, Underneath & In)	Resin Bed was located in the northwest corner of the SFP (depicted on Figure 1, SFP Schematic Diagram).
56	1-04-04j	Miscellaneous Operating Sources (North End of SFP)	Operating Sources are located in Peripheral Cells location 3 and 4 (depicted on Figure 1, SFP Schematic Diagram).

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Attachment 2

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Area/Item No.:	an an Araban an Araban Araban an Araban an Ar
Scenario Information:	Scenario No: 1-04-01a
	Title/Location: Fuel Rack Area
n an	Objective/Description: Fuel Assemblies (389 assemblies, does not include UD6N)
	Physical Configuration: A, B, C, & D
Inspection Process:	n an fhair an Air ann a Tha ann an Air ann an Ai
	 Perform examination of fuel assemblies B14, HD46, HE29, HE34, and HG29. Re-review DVDs (Disks - 2000 ISFSI Fuel Assembly Inspection, 8/13/03, 8/14/03, & 2/04 (TP2004-01 Disks 1 - 7)) to fully assess damaged fuel assemblies, missing fuel rods, missing fuel rod segments, and identification of dummy fuel rods. Reconcile results of the aforementioned activities to establish fuel assembly SNM basis. Any fuel assemblies that have inconclusive examination and inspection results should be re-examined and re-recorded.
Inspection Summary/I	 Re-reviewed the DVDs to determine if the videos adequately document the examination and inspection of the defined scenario areas. Each fuel assembly (except B14 and HD46 which could not be grappled, HE29 and HE34 which could not be removed from their channels, and HG29 which had its channel removed, but was not examined) was previously examined and video documented in 2000 and 2002 – 2003. Fuel assemblies B14 and HD46 are "cabled" assemblies with top cover plates that require special lifting techniques due to broken and/or missing tie rods. They cannot be examined from the top because of the plates and cables. HE29 and HE34 can only be examined from the top due to the channels.
Inspection Results:	 Did not perform examination of fuel assemblies B14, HD46, HE29, HE34, and HG29. Re-reviewed DVDs to fully assess damaged fuel assemblies, missing fuel rods, missing fuel rod segments, and identification of dummy fuel rods. Reconcile results of the aforementioned activities to establish fuel assembly SNM basis. Separate report with regard to SNM accountability has been written to document damaged and reconstituted fuel assemblies. Additional examination and video documentation was performed on 1/5/05 and 1/24/05. Combination of the previous existing video and the recent video taken in early 2005 was adequate to assess the subject scenario.
Video Records:	 DVDs generated during 2000 ISFSI Fuel Assembly Inspection. DVDs generated during Phase 1 of TBD-306: Disks dated 8/13/03, 8/14/03, and 2/04 (TP2004-01 Disks 1 - 7). DVDs generated in 2005: Disks dated 1/5/05 & 1/24/05.
Conclusion:	The three unaccounted for A-49 fuel rod segments and/or SNM were not located within the SFP location for Physical Configurations A, B, C, & D as defined by the scenario based on the

Attachment 2

examinations documented on the DVDs. Due to the issues associated with fuel assemblies B14 and HD46 (which could not be grappled), HE29 and HE34 (which could not be removed from their channels), and HG29 (which had its channel removed, but was not thoroughly examined since the inspection stand was not available) that were previously examined and video documented during the 2000 ISFSI Fuel Assembly Inspection to the extent possible. Fuel assemblies B14 and HD46 are "cabled" assemblies with top cover plates that require special lifting techniques due to broken and/or missing tie rods. They could only be examined from the top because of the plates and cables. HE29 and HE34 could only be examined from the top due to the channels. In all cases, special lifting devices and techniques are required to lift and move fuel assemblies B14 and HD46. Accordingly, due to the fragile nature and/or unique requirements associated with these fuel assemblies, it was concluded by HBPP that it would be extremely difficult if not impossible to adequately lift and examine the subject assemblies with currently available equipment. Therefore, at the time that the HBPP ISFSI is implemented, the subject fuel assemblies will be lifted and moved, allowing inspection of them. At that time, any evidence of the three unaccounted for fuel rod segments and/or SNM will be appropriately documented. It is highly unlikely that the fuel rod segments will be found in Physical Configuration A or C. However, it is reasonably possible that fuel fragments if found would be in Physical Configurations B or D.

Action Items:

- Examine fuel assemblies B14, HD46, HE29, HE34, and HG29 prior to or at the time of ISFSI implementation.
- Document any evidence of the three unaccounted for fuel rod segments and/or SNM found during the examination of the subject fuel assemblies.

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Attachment 2

Area/Item No.:	2	
Scenario Information:	2	
scenario mormation:		1-04-01b
	Title/Location:	Fuel Rack Area
	Objective/Description:	Peripheral Cells (45 cells)
	Physical Configuration:	A, B, C, & D
Inspection Process:	7), 7/26/04, 7/29/04, 8	(Disks – $2/04$ (TP2004-01 Disks 1 – 7), $3/04$ (TP2004-01 Disks 1, 2 & $3/2/04$, $8/11/04$, $8/14/04$, & $9/1/04$) and determine if the disks adequately nation and inspection of the defined areas. If the review is inconclusive,
	re-examine and insp	ect those areas and locations utilizing binoculars and/or underwater uding recorded documentation of same.
Inspection Summary/[Os to determine if the disks adequately document the examination and led scenario areas.
Inspection Results:	 Peripheral cell SFP2 which cannot be grap Video documentation Layer of resin in perip fragments (1/4" size), Performed additional resin vacuuming oper Additional examination 1/27/05 AM, & 1/27/0 	fully assess the Peripheral Cells. 2 could not be examined, since it is occupied by fuel assembly B14, pled without special lifting equipment that is currently not available. does not exist for SFP33, but it is presumed to be empty. oheral cells primarily in the northwest corner of the SFP could hide fuel but not as physical configurations A and C. video documentation of northwest corner area of the SFP following the ation to document the "as-is" conditions in the subject area. on and video documentation was performed on 1/18/05, 1/21/05, 5 PM. Combination of the previous existing video and the recent video as adequate to assess the subject scenario.
Video Records:	 3/04 (TP2004-01 Disk DVDs generated in 20 A summary compilati 	ing Phase 1 of TBD-306: Disks dated 2/04 (TP2004-01 Disks 1 – 7), is 1, 2 & 7), 7/26/04, 7/29/04, 8/2/04, 8/11/04, 8/14/04, & 9/1/04. 005: Disks dated 1/18/05, 1/21/05, 1/27/05 AM, & 1/27/05 PM. on DVD (Title: 02 – Peripheral Cells) was made from the Phase 1 of DVDs. This compilation was specifically developed to address this
Conclusion:		or A-49 fuel rod segments and/or SNM were not located within the SFP igurations A, B, C, & D as defined by the scenario.

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Action Items:

- Examine cells SFP22 and SFP33 prior to or at the time of ISFSI implementation.
- Perform a final examination of the northwest corner of the SFP following ISFSI implementation and rack removal in the area of the remaining resin bed.
- Document any evidence of the three unaccounted for fuel rod segments and/or SNM found during the examinations.

Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	3			هي ڪ
Scenario Information:	Scenario No:	1-04-01c		la vita se transferi
	Title/Location:	Fuel Rack Area	. :-	
	Objective/Description:	Peripheral Cells (45 cells) Uppe	r Rack Structure	
•	Physical Configuration:	A, B, C, & D		
Inspection Process:	document the examir re-examine and insp	(Disks dated7/26/04 & 7/28/04) nation and inspection of the defin pect those areas and locations uding recorded documentation of	ed areas. If the review utilizing binoculars an	is inconclusive,
Inspection Summary/I	• Re-reviewed the DVI	Ds to determine if the disks ade ned scenario areas.	quately document the o	examination and
Inspection Results:	 Performed additiona document the "as-is" Additional examination 	o fully assess the Peripheral Cell I video documentation of Perip conditions in the subject area. In and video documentation was video and the recent video taker	pheral Cell Upper Raperformed on 1/27/05.	Combination of
Video Records:	 DVD generated in 20 A summary compilat Struc., 11 – Struct. B 	ng Phase 1 of TBD-306: DVDs d 05: Disks dated 1/27/05 and 2/22 ion DVD (Title: 03 – Peripheral etween Main & Peripheral Racks This compilation was specificall	/05. Cell Rack Struc., 08 s) was made from the I	 Storage Rack Phase 1 of TBD-
Conclusion:	The three unaccounted for	or A-49 fuel rod segments and/o	r SNM were not locate	d within the SFP
· · · · · · · · · · · · · · · · · · ·	location for Physical Cont	figurations A, B, C, & D as define	d by the scenario.	
Action Items:	None	 A second sec second second sec		
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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	4	
Scenario Information:	Scenario No:	1-04-01d
	Title/Location:	Fuel Rack Area
	Objective/Description:	Peripheral Cells (45 cells) Middle-Tier Rack Structure
	Physical Configuration:	A, B, C, & D
Inspection Process:	disks adequately doo review is inconclusive	(Disks – "DVD dated 11/14/03", 7/26/04 & 7/28/04) and determine if the cument the examination and inspection of the defined areas. If the e, re-examine and inspect those areas and locations utilizing binoculars leo equipment, including recorded documentation of same.
Inspection Summary/		
	 Re-reviewed the DVD inspection of the define 	Ds to determine if the tapes adequately document the examination and ned scenario areas.
Inspection Results:	No additional examin	fully assess the Peripheral Cells Middle-Tier Rack Structure. nation or video documentation was performed. Combination of the eripheral Cells Middle-Tier Rack Structure area "fly-by" video was not ne subject scenario.
Video Records:	DVDs generated durir	ng Phase 1 of TBD-306: Disks dated 11/14/03, 7/26/04 & 7/28/04.
Conclusion:		
	location for Physical Cor examinations documented the Peripheral Cells Mid adequately examine the removal of all spent fuel to will be cut apart, examine Unit 3. At that time, any will be appropriately docu	or A-49 fuel rod segments and/or SNM were not located within the SFP infigurations A, B, C, & D as defined by the scenario based on the d on digital storage media. Due to the configuration and construction of ldle-Tier Rack Structure, it is extremely difficult if not impossible to subject area with currently available equipment. Therefore, after from the SFP and its storage in the HBPP ISFSI, the subject structure ed, and removed from the SFP during the decommissioning of HBPP evidence of the three unaccounted for fuel rod segments and/or SNM mented. It is highly unlikely that the fuel rod segments will be found in or C. However, it is reasonably possible that fuel fragments may be rations B or D.
Action Items:	.	
	of the structure.	ination of the structure as it is removed and the area following removal nce of the three unaccounted for fuel rod segments and/or SNM found n.

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Area/Item No.:	5		*.e* · · ·	: • • .
Scenario Information:	Scenario No:	1-04-01e	en en standar an de	· ,
	Title/Location:	Fuel Rack Area		
	Objective/Description:	Peripheral Cells (45 cells) Lowe	er Rack Structure	
	Physical Configuration:	A, B, C, & D		
Inspection Process:	• Re-review the DVDs	(Disks – "DVD dated 11/14/03".	7/26/04 & 7/28/04) and determin	e if the
	disks adequately do review is inconclusive	cument the examination and ir	spection of the defined areas. areas and locations utilizing bind	If the
Increation Summary	Dotailet	and the second second		
inspection Summary/	 Details: Re-reviewed the DVI inspection of the definition 	Ds to determine if the disks ade	quately document the examination	on and
Inspection Results:				
	No additional exami	Peripheral Cells Lower Rack	s Lower Rack Structure. was performed. Combination Structure area "fly-by" video w	
Video Records:	· · · · · · · · · · · · · · · · · · ·	Madial Vietola (Maria)		
	 DVDs generated duri 	ng Phase 1 of TBD-306: Disks d	ated 11/14/03", 7/26/04 & 7/28/04	t.
Conclusion:				, <u>-</u>
· · · · ·	location for Physical Co examinations documente the Peripheral Cells Lowe examine the subject area fuel from the SFP and i examined, and removed any evidence of the thre documented. It is hig Configuration A or C. H	nfigurations A, B, C, & D as d on digital storage media. Due er Rack Structure, it is extremely with currently available equipments storage in the HBPP ISFSI, from the SFP during the decomr e unaccounted for fuel rod segri- hly unlikely that the fuel rod	r SNM were not located within the defined by the scenario based to the configuration and construct difficult if not impossible to adecent. Therefore, after removal of all the subject structure will be cut nissioning of HBPP Unit 3. At the nents and/or SNM will be approp segments will be found in P le that fuel fragments may be for	on the ction of quately Il spent apart, at time, priately hysical
	Filysical Configurations E	ku elaΩ nue millo un terror a dura de Ru elaΩ nue millo un reπoloxío d		
Action Items:	Deform a final over	Station of the structure on it is r	emoved and the area following re	omovol
		ination of the structure as it is r		emovai
	Document any evide	nce of the three unaccounted for	or fuel rod segments and/or SNM	l found
		and One to a second		

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Area/Item No.:	6	
Scenario Information:	-	1-04-01f
	Title/Location:	Fuel Rack Area
	Objective/Description:	Peripheral Cells (45 cells) Between Cells and SFP Walls (North, East & West)
	Physical Configuration:	A, B, C, & D
Inspection Process:	document the examir re-examine and insp	6 (Disks – 7/26/04 & 7/28/04) and determine if the disks adequately nation and inspection of the defined areas. If the review is inconclusive, pect those areas and locations utilizing binoculars and/or underwater uding recorded documentation of same.
Inspection Summary/	Details:	
	Re-reviewed the DVI inspection of the defin	Ds to determine if the disks adequately document the examination and ned scenario areas.
Inspection Results: Video Records:	 Re-reviewed DVDs to fully assess the Peripheral Cells between Cells and SFP Walls (North, East, & West). Performed additional video documentation of northwest corner area of the SFP following the resin vacuuming operation to document the "as-is" conditions in the subject area. Additional examination and video documentation was performed on 1/10/05 parts 1 & 2, 1/17/05 parts 1 & 2, 1/18/05, 1/19/05,, 1/27/05 am & pm and 2/22/05. Combination of the existing video and SFP NW corner area video is not adequate to assess the subject scenario. Video only shows the gap between the upper channel of the Peripheral Cells and the wall of the SFP. The video does not show the lower channel area of the Peripheral Cells. DVDs generated during Phase 1 of TBD-306: Disks dated 7/26/04 & 7/28/04. DVDs generated in 2005: Disks dated 1/10/05 Parts 1 & 2, 1/11/05 parts 1 & 2, 1/17/05 parts 1 & 2, 1/18/05, 1/27/05 am & pm and 2/22/05. A summary compilation DVD (Title: 06 Between Cells and Walls) was made from the Phase 1 of TBD-306 and 2005 DVDs. This compilation was specifically developed to address this scenario. 	
Conclusion:	The three unaccounted for A-49 fuel rod segments and/or SNM were not located within the SFP location for Physical Configurations A, B, C, & D as defined by the scenario based on the examinations documented on digital storage media. Due to the configuration and construction of the Peripheral Cells (45 cells) Between Cells and SFP Walls (North, East & West), it is extremely difficult if not impossible to adequately examine the subject area with currently available equipment. After removal of all spent fuel from the SFP and its storage in the HBPP ISFSI, the subject structure will be cut apart, examined, and removed from the SFP during the decommissioning of HBPP Unit 3. At that time, any evidence of the three unaccounted for fuel rod segments and/or SNM will be documented. It is highly unlikely that the fuel rod segments will be found in Physical Configuration A or C. However, it is reasonably possible that fuel fragments may be found in Physical Configurations B or D.	

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Action Items:

- Perform a final examination of the area following ISFSI implementation.
- Document evidence of the three unaccounted for fuel rod segments and/or SNM found during the examination.

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	7	
Scenario Information:	Scenario No:	1-04-01g
	Title/Location:	Fuel Rack Area
	Objective/Description:	Storage Rack Cells (352 cells)
	Physical Configuration:	A, B, C, & D
Inspection Process:	if the disks adequate review is inconclusive	from the Boral Can Inspection (TP 2004-01, Disks $1 - 7$) and determine by document the examination and inspection of the defined areas. If the e, re-examine and inspect those areas and locations utilizing binoculars deo equipment, including recorded documentation of same.
Inspection Summary/		
	 Re-reviewed the DVI inspection of the defined 	Ds to determine if the disks adequately document the examination and ned scenario areas.
Inspection Results:		o fully assess the Storage Rack Cells. ation or video documentation was performed.
Video Records:	A summary compilation	ng the Boral Can Inspection (TP 2004-01, Disks 1 – 7). tion DVD (Title: 07 – Storage Cells) was made from the Boral Can is compilation was specifically developed to address this scenario.
Conclusion:	The three unaccounted for A-49 fuel rod segments and/or SNM were not located within the SFP location for Physical Configurations A, B, & C as defined by the scenario based on the examinations documented on videotape. However, SNM in the form of a fuel fragment was identified for Physical Configuration D. A fuel fragment was identified in cell 62-12, retrieved and placed in the clad fuel fragment container. Fuel assembly HD46 is a "cabled" assembly with top cover plates that requires special lifting techniques due to broken and/or missing tie rods. It could not be lifted to examine the Storage Rack Cell in which it is located. In this case, special lifting devices and techniques are required to lift and move the subject assembly. Accordingly, due to the fragile nature and/or unique requirements associated with this fuel assembly, it was concluded by HBPP that it would be extremely difficult if not impossible to adequately lift and examine the subject assembly with currently available equipment. Therefore, at the time that the HBPP ISFSI is implemented, the subject fuel assembly will be lifted and moved, allowing inspection of the associated Storage Rack Cell. At that time, any evidence of the three unaccounted for fuel rod segments and/or SNM will be appropriately documented. It is highly unlikely that the fuel rod segments will be found in Physical Configuration A or C. However, it is reasonably possible that fuel fragments may be found in Physical Configurations B or D.	
Action Items:	Perform a final examination of the area following ISFSI implementation.	

 Document any evidence of the three unaccounted for fuel rod segments and/or SNM found during the examination.

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Area/Item No.:	8			÷
Scenario Information	: Scenario No:	1-04-01h		
	Title/Location:	Fuel Rack Area		
	Objective/Description:	Storage Rack Cells (352	cells) Upper Rack Structure	
	Physical Configuration	: A, B, C, & D		
Inspection Process:	adequately documer inconclusive, re-exar	nt the examination and ins	/26/04, & 7/28/04) and determine if pection of the defined areas. If the reas and locations utilizing binocula d documentation of same.	review is
Inspection Summary			ks adequately document the examin	nation and
Inspection Results: Video Records:	 Performed additional document the "as-is" Additional examination the existing video and assess the subject so DVDs generated dur DVDs generated in 2 A summary compila 	I video documentation of conditions in the subject at on and video documentation of Storage Rack Cell Upper cenario. ing Phase 1 of TBD-306: D 2005: Disk dated 1/27/05. tion DVD (Title: 03 – Peri	on was performed on 1/27/05. Com er Rack Structure area video was ac visks dated 11/14/03, 7/26/04, & 7/28 ipheral Cell Rack Struc., 08 – Stor	bination of dequate to 9/04. age Rack
: • . • •	Struc., 11 – Struct. E 306 and 2005 DVDs	This compilation was spe	Racks) was made from the Phase cifically developed to address this so	1 of TBD- cenario.
Conclusion:		figurations A, B, C, & D as	and/or SNM were not located withi defined by the scenario.	n the SFP
Action Items:	• None			
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Area/Item No.:	9	
Scenario Information:	Scenario No:	1-04-01i
	Title/Location:	Fuel Rack Area
	Objective/Description:	Storage Rack Cells (352 cells) Middle-Tier Rack Structure
	Physical Configuration:	A, B, C, & D
Inspection Process:	adequately document inconclusive, re-exan	(Disks dated 11/14/03, 7/26/04, & 7/28/04) and determine if the disks the examination and inspection of the defined areas. If the review is nine and inspect those areas and locations utilizing binoculars and/or ipment, including recorded documentation of same.
Inspection Summary/I		Os to determine if the disks adequately document the examination and ned scenario areas.
Inspection Results:	No additional examined and the second s	o fully assess the Storage Rack Cells Middle-Tier Rack Structure. nation or video documentation was performed. Combination of the prage Rack Cells Middle-Tier Rack Structure area "fly-by" video was not ne subject scenario.
Video Records:	DVDs generated duri	ng Phase 1 of TBD-306: Disks dated 11/14/03, 7/26/04, & 7/28/04.
Conclusion:	location for Physical Con examinations documented the Storage Rack Cells I adequately examine the removal of all spent fuel will be cut apart, examin Unit 3. At that time, any will be appropriately docu	or A-49 fuel rod segments and/or SNM were not located within the SFP infigurations A, B, C, & D as defined by the scenario based on the d on digital storage media. Due to the configuration and construction of Middle-Tier Rack Structure, it is extremely difficult if not impossible to subject area with currently available equipment. Therefore, after from the SFP and its storage in the HBPP ISFSI, the subject structure ed, and removed from the SFP during the decommissioning of HBPP evidence of the three unaccounted for fuel rod segments and/or SNM immented. It is highly unlikely that the fuel rod segments will be found in or C. However, it is reasonably possible that fuel fragments may be rations B or D.
Action Items:	of the structure.	ination of the structure as it is removed and the area following removal nce of the three unaccounted for fuel rod segments and/or SNM found n.

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Area/Item No.:	10	
Scenario Information:	Scenario No:	1-04-01j
	Title/Location:	Fuel Rack Area
· · ·	Objective/Description:	Storage Rack Cells (352 cells) Lower Rack Structure
	Physical Configuration:	A, B, C, & D
Inspection Process:		
	adequately documen inconclusive, re-exan	(Disks dated 11/14/03, 7/26/04, & 7/28/04) and determine if the disks t the examination and inspection of the defined areas. If the review is nine and inspect those areas and locations utilizing binoculars and/or ipment, including recorded documentation of same.
Inspection Summary/	Details:	
• •		Ds to determine if the disks adequately document the examination and ned scenario areas.
Inspection Results:		
	• No' additional exami	o fully assess the Storage Rack Cells Lower Rack Structure. nation or video documentation was performed. Combination of the storage Rack Cells Lower Rack Structure area "fly-by" video was not he subject scenario.
Video Records:		
	DVDs generated duri	ng 2003 Phase 1 of TBD-306: Disks dated 11/14/03, 7/26/04, & 7/28/04.
Conclusion:	location for Physical Co examinations documente the Storage Rack Cells adequately examine the removal of all spent fuel will be cut apart, examin Unit 3. At that time, any will be appropriately docu Physical Configuration A found in Physical Configu	
Action Items:	Perform a final exam	ination of the structure as it is removed and the area following removal
	 Document any evide during the examination 	
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Area/Item No.:	11		
Scenario Information:	Scenario No:	1-04-01k	
	Title/Location:	Fuel Rack Area	
	Objective/Description:	Storage Rack Structure Between Storage Rack Cells and Peripheral Cells	
	Physical Configuration: A, B, C, & D		
Inspection Process:	adequately documen inconclusive, re-exar	(Disks dated 11/14/03, 7/26/04, & 7/28/04) and determine if the disks It the examination and inspection of the defined areas. If the review is nine and inspect those areas and locations utilizing binoculars and/or uipment, including recorded documentation of same.	
Inspection Summary/	 Provide the provide the provide the determine if the disks adequately document the examination and inspection of the defined scenario areas. 		
Inspection Results:	 Re-reviewed DVDs to fully assess the Storage Rack Structure Between Storage Rack Cells and Peripheral Cells. Performed additional video documentation of Storage Rack Structure Between Storage Rack Cells and Peripheral Cells to document the "as-is" conditions in the subject area. Additional examination and video documentation was performed on 1/27/05. Combination of the existing video and Storage Rack Structure Between Storage Rack Cells and Peripheral Cells area video is not adequate to assess the subject scenario. Video only shows the area of the upper channel of the Storage Rack Structure between Storage Rack Cells and Peripheral Cells. The video does not show the lower portion of this structure. 		
Video Records:	 DVD generated in 20 A summary compilat Struc., 11 – Struct. B 	ing Phase 1 of TBD-306: Disks dated 11/14/03, 7/26/04, & 7/28/04. 05: Disk dated 1/27/05. tion DVD (Title: 03 – Peripheral Cell Rack Struc., 08 – Storage Rack Between Main & Peripheral Racks) was made from the Phase 1 of TBD- This compilation was specifically developed to address this scenario.	
Conclusion:	The three unaccounted A-49 for fuel rod segments and/or SNM were not located within the SFP location for Physical Configurations A, B, C, & D as defined by the scenario based on the examinations documented on digital storage media. Due to the configuration and construction of the Storage Rack Structure Between Storage Rack Cells and Peripheral Cells, it is extremely difficult if not impossible to adequately examine the subject lower area of the structure with currently available equipment. Therefore, after removal of all spent fuel from the SFP and its storage in the HBPP ISFSI, the subject structure will be cut apart, examined, and removed from		

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the SFP during the decommissioning of HBPP Unit 3. At that time, any evidence of the three unaccounted for fuel rod segments and/or SNM will be appropriately documented. It is highly unlikely that the fuel rod segments will be found in Physical Configuration A or C. However, it is reasonably possible that fuel fragments may be found in Physical Configurations B or D.

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Action Items:

• Perform a final examination of the area following ISFSI implementation.

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 Document any evidence of the three unaccounted for fuel rod segments and/or SNM found during the examination.

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Area/Item No.:	12	
Scenario Information:	Scenario No:	1-04-011
	Title/Location:	Fuel Rack Area
	Objective/Description:	Gap – Boral Can & Cell (389 Cells)
	Physical Configuration:	A, B, C, & D
Inspection Process:	 For the Central Storage Racks confirm space between Boral Can and cell is inadequate to accommodate fuel rod segments. Re-review the Boral Can Inspection DVDs (TP2004-01 disks 1 - 7) and determine if the disks adequately document the examination and inspection of the defined areas for both the Peripheral and Central Storage Racks. If the review is inconclusive, re-examine and inspect those areas and locations utilizing binoculars and/or underwater video equipment, including recorded documentation of same. Visually assess, examine and inspect those areas and locations utilizing binoculars and/or underwater video equipment, including recorded documentation of same. 	
Inspection Summary/I	 For the Central Stora can and the rack cell For the Peripheral Stora the Boral Can and the 	ge Racks, it appears that there is inadequate space between the Boral to accommodate the objects (A, B, C & D) of interest. orage Rack cells, due to the configuration of the cells, the gap between a cell wall was found to be adequate to accommodate the objects (A, B, b be placed in the gap between the can and the cell.
Inspection Results:	 Performed additional conditions in the subje Additional examinatio 	o fully assess the Gap – Boral Can & Cell. video documentation of Gap – Boral Can & Cell to document the "as-is" ect area. n and video documentation was performed on 1/27/05. Combination of nd Gap – Boral Can & Cell area video was adequate to assess the
Video Records:	•	004: TP2004-01 disks 1 - 7. 05: Disk dated 1/27/05.
Conclusion:	For the Central Storage Rack cells, dimensional comparative analysis was performed and determined that it is physically not possible for a fuel rod to fit in the gap between a fuel assembly containing a Boral can and its storage rack to a depth of more than a few feet. As a result, the fuel assembly to storage rack gap was not inspected for each fuel assembly and associated cell. In addition, during the 2004 Boral Can Inspection (TP 2004-01), all of the fuel assemblies with their respective Boral cans (except those exempted – see scenario 1-04-01a) were removed from the peripheral and central storage rack cells and each cell was inspected for the presence of fuel fragments. Any of the Physical Configurations would have been identified during this inspection. The three unaccounted for fuel rod segments and/or SNM were not located within the SFP location for the Physical Configurations as defined by the scenario.	

Attachment 2

Action Items: • N	lone	en o n <u>ation</u> au e Se <u>nsitu</u> t da		
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Attachment 2

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Area/Item No.:	13			
Scenario Information:	Scenario No:	1-04-01m		
	Title/Location:	Fuel Rack Area		
	Objective/Description:	Vertical Pipes (Part of the Storage Rack Cells) Between East and West Sections of the Storage Rack Cells		
	Physical Configuration: A, B, C, & D			
Inspection Process:	examination and insp and inspect those	(Disk 8/2/04) and determine if the disk adequately documents the bection of the defined areas. If the review is inconclusive, re-examine areas and locations utilizing binoculars and/or underwater video recorded documentation of same.		
Inspection Summary/Details:				
	 Re-reviewed the DVI inspection of the defir 	D to determine if the disk adequately documents the examination and ned scenario areas.		
Inspection Results:	 Re-reviewed DVD to fully assess the Vertical Pipes (Part of the Storage Rack Cells) Between East and West Sections of the Storage Rack Cells. Performed additional video documentation of the Vertical Pipes (Part of the Storage Rack Cells) Between East and West Sections of the Storage to document the "as-is" conditions in the subject area. Additional examination and video documentation was performed on 1/27/05. Combination of the existing video and the Vertical Pipes (Part of the Storage Rack Cells) Between East and West Sections of the Storage Rack Cells area video was not adequate (video was not clear in some cases) to assess the subject scenario. A rod was inserted into the pipes along their entire length to verify that the pipes were empty. This is video documented on the 8/2/04 disk. 			
Video Records:	 DVD generated in 200 A summary compilation 	ng Phase 1 of TBD-306: Disk dated 8/2/04. 05: Disk dated 1/27/05. on DVD (Title: 13 – Vertical Pipes) was made from the Phase 1 of TBD- This compilation was specifically developed to address this scenario.		
Conclusion:	The three unaccounted for A-49 fuel rod segments and/or SNM were not located within the SFP location for Physical Configurations A, B, C, & D as defined by the scenario.			
Action Items:	None			

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Attachment 2

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

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PHYSICAL INSPECTION RESULTS			
Area/Item No.:	14		
Scenario Information:	Scenario No:	1-04-02a	
	Title/Location:	Liner General Area	
	Objective/Description:	Fuel Rack Area Floor - General	
	Physical Configuration:	A, B, C, & D	
Inspection Process:	9/3/04) and determin the defined areas.	(Disks dated 8/14/03, 7/26/04, 7/27/04, 7/28/04, 8/2/04, 8/14/04, & e if the disks adequately document the examination and inspection of f the review is inconclusive, re-examine and inspect those areas and inoculars and/or underwater video equipment, including recorded ne.	
Inspection Summary/I	Details:		
	Re-reviewed the DVI inspection of the defin	Ds to determine if the disks adequately document the examination and ned scenario areas.	
Inspection Results: Video Records:	 Most of the SFP floot (A, B, C, & D) were a not clear. Performed additional document the "as-is" Additional examinati 1/22/05, & 1/27/05. General area video w DVDs generated duri 8/2/04, 8/14/04, & 9/3 DVDs generated in 20 A summary compilation 	 o fully assess the Fuel Rack Area Floor – General area. or area was searched providing reasonable assurance that the objects not there. However, there were isolated areas and locations that were video documentation of the Fuel Rack Area Floor - General area to conditions in the subject area. on and video documentation was performed on 1/18/05, 1/21/05, Combination of the existing video and the Fuel Rack Area Floor - ras not adequate to assess the subject scenario. ng Phase 1 of TBD-306: Disks dated 8/14/03, 7/26/04, 7/27/04, 7/28/04, 8/04. D05: Disk dated 1/18/05, 1/21/05, 1/22/05, & 1/27/05. ion DVD (Title: 14 – Fuel Rack Floor) was made from the Phase 1 of DVDs. This compilation was specifically developed to address this 	
Conclusion:	location for Physical Co examinations documente interference of the Stora adequately examine the removal of all spent fuel will be cut apart, examin Unit 3. At that time, any will be appropriately docu	or A-49 fuel rod segments and/or SNM were not located within the SFP infigurations A, B, C, & D as defined by the scenario based on the d on digital storage media. Due to the configuration, construction, and age Rack Cells Structure, it is extremely difficult if not impossible to a subject area with currently available equipment. Therefore, after from the SFP and its storage in the HBPP ISFSI, the subject structure red, and removed from the SFP during the decommissioning of HBPP revidence of the three unaccounted for fuel rod segments and/or SNM umented. It is highly unlikely that the fuel rod segments will be found in or C. However, it is reasonably possible that fuel fragments may be irrations B or D.	

Attachment 2

Action Items:

- Perform a final examination of the area following ISFSI implementation.
- Document any evidence of the three unaccounted for fuel rod segments and/or SNM found during the examination.

Attachment 2

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Area/Item No.:	15		•	
Scenario Information:	Scenario No:	1-04-02b		• •
	Title/Location:	Liner General Area		
	Objective/Description:	Cask Pit Area Floor - General		
	Physical Configuration:	A, B, C, & D	·	
Inspection Process:	· · ·	 Topological and the second seco		
	document the examin re-examine and insp	(Disks – 8/2/04 & 12/22/04) and detern ation and inspection of the defined areas. ect those areas and locations utilizing b uding recorded documentation of same.	If the review is	s inconclusive,
Inspection Summary/I	Details:	and the second		
		Ds to determine if the disks adequately do ned scenario areas.	cument the ex	amination and
Inspection Results:				
inspection results.	Re-reviewed DVDs to	fully assess the Cask Pit Area Floor - Gen	eral area.	
	 Most of the Cask Pit A the objects (A, B, C, and locations that wer Performed additional document the "as-is" o Additional examinatio 	Area Floor - General was searched providir & D) were not there. However, there were re not clear. video documentation of the Cask Pit A conditions in the subject area. n and video documentation was performed	ng reasonable re some small rea Floor - Go d on 1/20/05. (isolated areas eneral area to Combination of
	assess the subject sc		a video was no	
Video Records:				
		ng Phase 1 of TBD-306: Disks dated 8/2/04 05: Disk dated 1/20/05.	I & 12/22/04.	
		6 CERENCE STREET		
· · · ·	location for Physical Con examinations documented items in the Cask Pit Are currently available equipm SFP during decommission that time, any evidence appropriately documented Configuration A or C. H Physical Configurations B	or A-49 fuel rod segments and/or SNM we nfigurations A, B, C, & D as defined by d on digital storage media. Due to the stora a Floor area, it is difficult to adequately en nent. Therefore, after removal of all chann ning, the subject area will be clear of interfi- of the three unaccounted for fuel rod segment. It is highly unlikely that the fuel rod segment owever, it is reasonably possible that fue or D.	the scenario age of the char xamine the sub nels and other erences and ol egments and/o nents will be for	based on the nels and other bject area with items from the bstructions. At or SNM will be und in Physical
Action Items:	Perform a final exami	nation of the area following ISFSI implement nce of the three unaccounted for fuel rod		/or SNM found

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Attachment 2

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Area/Item No.:	16	
Scenario Information:	Scenario No:	1-04-02c
	Title/Location:	Liner General Area
	Objective/Description:	Energy Absorber Area Floor - General
	Physical Configuration:	A, B, C, & D
Inspection Process:	the disks adequately review is inconclusive	(Disks – 7/9/04, 7/27/04, 7/28/04, 8/26/04, & 9/2/04) and determine if document the examination and inspection of the defined areas. If the e, re-examine and inspect those areas and locations utilizing binoculars leo equipment, including recorded documentation of same.
Inspection Summary/I		Os to determine if the disks adequately document the examination and ned scenario areas.
Inspection Results: Video Records:	 Most of the Energy assurance that the of isolated areas and loc Performed additional to document the "as-is Additional examinatio the existing video a adequate to assess the DVDs generated duri & 9/2/04. DVD generated in 200 A summary compilation 	ng Phase 1 of TBD-306: Disks dated 7/9/04, 7/27/04, 7/28/04, 8/26/04, 05: Disk dated 1/18/05. on DVD (Title: 16 – Energy Absorber Area Floor, 50 – Energy Absorber) Phase 1 of TBD-306 and 2005 DVDs. This compilation was specifically
Conclusion:	location for Physical Con examinations documenter and in the vicinity of the adequately examine the removal of all spent fuel will be removed from the evidence of the three un documented. It is high	or A-49 fuel rod segments and/or SNM were not located within the SFP infigurations A, B, C, & D as defined by the scenario based on the d on digital video media. However, due to the amount of debris under Energy Absorber structure, it is extremely difficult if not impossible to subject area with currently available equipment. Therefore, after from the SFP and its storage in the HBPP ISFSI, the subject structure e SFP during the decommissioning of HBPP Unit 3. At that time, any naccounted for fuel rod segments and/or SNM will be appropriately hy unlikely that the fuel rod segments will be found in Physical owever, it is reasonably possible that fuel fragments may be found in or D.

Attachment 2

Action Items:

- Perform a final examination of the Energy Absorber as it is removed and the area following ٠ removal of the Energy Absorber.
- Document any evidence of fuel rod segments and/or SNM found during the examination. ٠

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Attachment 2

Area/Item No.:	17	
Scenario Information:	Scenario No:	1-04-02d
	Title/Location:	Liner General Area
	Objective/Description:	SFP Sump
	Physical Configuration:	A, B, C, & D
Inspection Process:	examination and insp and inspect those	(Disk – 7/26/04) and determine if the disk adequately documents the bection of the defined areas. If the review is inconclusive, re-examine areas and locations utilizing binoculars and/or underwater video recorded documentation of same.
Inspection Summary/I		
	 Re-reviewed the DVI inspection of the definition 	D to determine if the disk adequately documents the examination and ned scenario areas.
Inspection Results:	 Most of the SFP Sum (A, B, C, & D) were a not clear. Additional examination 12/28/04, 1/12/05 Par 3/25/05. Combination was adequate to asset The sump is clean and 	fully assess the SFP Sump. np area was searched providing reasonable assurance that the objects not there. However, there were isolated areas and locations that were on and video documentation was performed on 12/22/04, 12/23/04, rts AM & PM, 1/17/05 Parts 1 & 2, 1/19/05, 1/20/05, 1/27/05, 3/23/05 & n of the previous existing video and the recent video taken in early 2005 ess the subject scenario. If is free of fuel fragments. The DVD of 3/23/05 shows the removal of a during the sump clean up, and the DVD of 3/25/05 shows the clean
Video Records:	 DVDs generated in 20 1/17/05 Parts 1 & 2, 1 A summary compilation 	g Phase 1 of TBD-306: Disk dated 7/26/04. 005: Disks dated 12/22/04, 12/23/04, 12/28/04, 1/12/05 Parts AM & PM, /19/05, 1/20/05, 1/27/05, 3/23/05 & 3/25/05. on DVD (Title: 17 – SFP Sump) was made from the Phase 1 of TBD-306 s compilation was specifically developed to address this scenario.
Conclusion:	location for Physical Co examinations documente	or A-49 fuel rod segments and/or SNM were not located within the SFP onfigurations A, B, & C as defined by the scenario based on the d on the DVDs. However, SNM in the form of a fuel fragment was nfiguration D. The SNM fuel fragment is documented in Calculation NX03/23/05, 03/25/05)
Action Items:	• None	

Attachment 2

Area/Item No.:	18	
Scenario Information:	Scenario No:	1-04-02e
	Title/Location:	Liner General Area
	Objective/Description:	SFP Sump Drain Line
	Physical Configuration:	: A, B, C, & D
	underwater video equ	mine and inspect those areas and locations utilizing binoculars and/or upment, including recorded documentation of same.
Inspection Summary/I		
Inspection Results:	Re-reviewed the exis Sump Drain Line area	sting library of DVDs to determine if disks had been made of the SFP a.
	 Concluded that there Performed video do conditions in the subj Initial examination and 	were no DVDs of the SFP Sump Drain Line area. cumentation of SFP Sump Drain Line area to document the "as-is" ect area. ad video documentation was performed on 1/17/05 to assess the subject
	 The accumulated vid portion of the drain li buildup of debris insid Sump was cleaned ir 	leos provide a limited view of the SFP Sump Drain Line area. Only a ine near the sump can be viewed. It was also noticed that there was a
Video Records:		
Conclusion:	The three unaccounted f	005: Disks dated 1/17/05, 3/23/05 & 3/25/05.
Action Items:	location for Physical Co examinations documenteNone	onfigurations A, B, C, & D as defined by the scenario based on the d on the DVDs.

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Attachment 2

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Area/Item No.:	19	
Scenario Information:	Scenario No:	1-04-02f
	Title/Location:	Liner General Area
	Objective/Description:	SFP Skimmer Pipes
	Physical Configuration:	A, B, D
Inspection Process:	video equipment, inc	mine and inspect those areas and locations utilizing binoculars and/or luding recorded documentation of same. As an alternate examination on dose survey of the subject pipes may be performed to confirm the ns.
Inspection Summary/	The SFP Skimmer P	ipes are covered. Accordingly, it was determined that a radiation dose appropriate to confirm the Physical Configurations for the scenario.
Inspection Results:	Survey No. 5-049) onThe results of the sul	bject Area Survey Report indicate that the radiation dose level was less n confirms that the fuel rod segments and/or SNM were not present for
Video Records:	 No DVDs were gene Configurations for the 	erated as a part of the examination and confirmation of the Physical scenario.
Conclusion:		or A-49 fuel rod segments and/or SNM were not located within the SFP figurations A, B, & D as defined by the scenario.
Action Items:	None	

Attachment 2

Area/Item No.:	20		· . · ·
Scenario Information	: Scenario No:	1-04-02g	e e la companya de la
	Title/Location:	Liner General Area	
	Objective/Description:	SFP Suction Piping, Foot Valve & Recirculation)	Discharge Piping (SFP
	Physical Configuration:	: A, B, & D	
Inspection Process:	 Visually assess, exa underwater video equ The dimension of Ph size that it would r Configuration C is no While the three un Configurations would configuration of the c bottom, precludes the not having it fall out c of the SFP, need no and/or SNM. Details: Re-reviewed various 	mine and inspect those areas and upment, including recorded docume sysical Configuration C, the fuel roo not fit in the foot valve and suc trequired to be considered for the fu- accounted for fuel segments are d physically fit in the SFP recircu- discharge piping, being a long run of e introduction of any of the Physic of the piping. Accordingly, the discl of be considered as a location of the DVDs to determine if the SFP Su- lation) is depicted in a level of de	I segments in the canister, is of such ction piping. Accordingly, Physical
Inspection Results:	 Piping, Foot Valve & Performed additional Piping (SFP Recircu assess the subject so It was determined tha would have preclude segments and/or SNI 	Discharge Piping (SFP Recirculation l video documentation of SFP Suc- ulation) to document the "as-is" co- cenario. at the foot valve and suction piping at the Physical Configurations ass	tion Piping, Foot Valve & Discharge onditions in the subject area and to are protected by an inlet strainer that ociated with either the three fuel rod
Video Records:	DVD generated in 20	05: Disk dated 1/18/05.	. '
Conclusion:		or A-49 fuel rod segments and/or \$ figurations A, B, & D as defined by	SNM were not located within the SFP the scenario.
Action Items:	None		

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Attachment 2

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Area/Item No.:	21	
Scenario Information:	Scenario No:	1-04-02h
	Title/Location:	Liner General Area
	Objective/Description:	SFP Liner & Wall Juncture (Corner Areas – 4 Locations)
	Physical Configuration:	A, B, D
Inspection Process:	 underwater video equ The dimension of Physize that it would not required to be conside Confirm that SE and S 	nine and inspect those areas and locations utilizing binoculars and/or ipment, including recorded documentation of same. ysical Configuration C, the fuel rod segments in the canister, is of such fit in the subject areas. Accordingly, Physical Configuration C is not ered for this scenario. SW corners of the SFP liner are sealed. TP 2/10/87 Flush of SFP Liner Gap which may provide disposition of
Inspection Summary/I	Re-reviewed the exis	ting library of DVDs to determine if disks had been made of the SFP (Corner Areas – 4 Locations) areas.
Inspection Results:	 Performed visual obs areas to determine the Confirmed that the SE Observed that the NE 	were no DVDs of the SFP Liner & Wall Juncture area. servation of SFP Liner & Wall Juncture (Corner Areas – 4 Locations) e "as-is" conditions in the subject areas. E and SW corners of the SFP liner were previously sealed. and NW corners of the SFP liner are open, but the gap opening is very uire a very deliberate act to place the segments in the opening.
Video Records:	• None.	
Conclusion:		or A-49 fuel rod segments and/or SNM were not located within the SFP igurations A, B, & D as defined by the scenario.
Action Items:	None	

Attachment 2

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Area/Item No.:	22			
Scenario Information:	Scenario No:	1-04-02i		·
	Title/Location:	Liner General A	rea	
	Objective/Description:	Fuel Transfer B	asket Rack Area -	General
	Physical Configuration:	A, B, C, & D	· ·.	· ,
Inspection Process:	documents the exami	ination and inspe lect_those_areas	ction of the define and locations u	4) to determine if the disk adequately d areas. If the review is inconclusive, tilizing binoculars and/or underwater ame.
Inspection Summary/I	Details:			
	Re-reviewed the DVI inspection of the definition			tely documents the examination and
Inspection Results:	 The subject DVD of t were not there. No additional examination of the statement of the sta	fully assess the F the area provided ination or video	d reasonable assu	tet Rack Area - General. Irance that the objects (A, B, C, & D) was performed. The existing Fuel as adequate to assess the subject
Video Records:	 8/14/03 & 8/17/04. A summary compilat Transfer Basket B, 41 This compilation was 	ion DVD (Title: 1 – Transfer Bas specifically deve	22 – Transfer Ba ket C) was made loped to address t	f TBD-306: Disks dated DVD dated isket, 39 – Transfer Basket A, 40 – from the Phase 1 of TBD-306 DVDs. his scenario.
Conclusion:			segments and/or s	SNM were not located within the SFP by the scenario.
Action Items:	• None			

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Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	23	
Scenario Information:	Scenario No:	1-04-03a
	Title/Location:	Containers
	Objective/Description:	ISC – 1 - Red
	Physical Configuration:	A, B, C, & D
Inspection Process:	inspection of the define	and determine if the disks adequately document the examination and ned areas. If the review is inconclusive, re-examine and inspect those utilizing binoculars and/or underwater video equipment, including ion of same.
Inspection Summary/I	Details:	
	7/27/04, 7/29/04, 8/4/	s (Disks – 7/11/04, 7/12/04, 7/13/04, 7/17/04, 7/19/04, 7/23/04, 7/25/04, /04, 8/15/04, 8/26/04, & 8/27/04) to determine if the disks adequately ation and inspection of the defined scenario areas.
Inspection Results:	 is" condition for the su Concluded that subject Additional video doct 12/10/04, 12/22/04, 1 Part A) to document for DVD recorded on 4/20 Combination of the p 	o fully assess the content of the subject ISC. DVDs only provide the "as- ubject ISC on the date that the disk was made. ct ISC content is transitory. cumentation of subject ISC was made during 2004/2005 (DVDs – 2/23/04 AM & PM, 12/29/04 Part A, 12/30/04 PM, 12/31/04, & 1/4/05 uel fragments. D/05 documents that this ISC is empty. previous existing video, the recent video taken in 2004/2005, and fuel c (Calculation NX-288) was adequate to assess the subject scenario.
Video Records:	7/17/04, 7/19/04, 7/23 • DVDs generated in la	ring Phase 1 of TBD-306: Disks dated 7/11/04, 7/12/04, 7/13/04, 8/04, 7/25/04, 7/27/04, 7/29/04, 8/4/04, 8/15/04, 8/26/04, & 8/27/04. Ite 2004 and early 2005: Disks dated 12/10/04, 12/22/04, 12/23/04 AM A, 12/30/04 PM, 12/31/04, 1/4/05 Part A & 4/20/05.
Conclusion:	Physical Configurations A fragments was identified f in Calculation NX-288 an 7/13/04, 7/25/04, 7/26/04, 8/18&19/04, 8/26/04, 8/27 10/1/04 AM & PM, 10/5	or A-49 fuel rod segments were not located within the SFP location for A, B, & C as defined by the scenario. However, SNM in the form of fuel for Physical Configuration D. The SNM fuel fragments are documented ad on video (DVDs – 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 7/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, 1/04, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 2/18/05, 3/2/05, 3/23/05 and 3/25/05).

Action Items:

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Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	24		
Scenario Information:	Scenario No:	1-04-03b	. • •
	Title/Location:	Containers de la	
	Objective/Description:	ISC – 2 - Blue	
	Physical Configuration:	A, B, C, & D	
Inspection Process:	inspection of the define	and determine if the disks adequately document the examined areas. If the review is inconclusive, re-examine and ins utilizing binoculars and/or underwater video equipment, ion of same.	pect those
Inspection Summary/	 Re-reviewed the DVD 7/27/04, 7/29/04, 8/4/ 	es (Disks – 7/11/04, 7/12/04, 7/13/04, 7/17/04, 7/19/04, 7/23/0 /04, 8/15/04, 8/26/04, & 8/27/04) to determine if the disks a ation and inspection of the defined scenario areas.	
Inspection Results:	 is" condition for the subject Concluded that subject Additional video docu PM, 12/10/04, 12/22 12/31/04, & 1/4/05 Pate DVD recorded on 4/20 Combination of the pate 	o fully assess the content of the subject ISC. DVDs only providubject ISC on the date that the disk was made. ct ISC content is transitory. mentation of subject ISC was made during 2004/2005 (DVDs /04, 12/23/04 AM & PM, 12/28/04, 12/29/04 Part A, 12/3 art A) to document fuel fragments. D/05 documents that this ISC contains irradiated hardware. previous existing video, the recent video taken in 2004/2005 (Calculation NX-288) was adequate to assess the subject sce	s – 10/6/04 30/04 PM, 5, and fuel
Video Records:	7/19/04, 7/23/04, 7/25 • DVDs generated in la	ng Phase 1 of TBD-306: Disks dated 7/11/04, 7/12/04, 7/13/0 5/04, 7/27/04, 7/29/04, 8/4/04, 8/15/04, 8/26/04 & 8/27/04. ate 2004 and early 2005: Disks dated 10/6/04 PM, 12/10/04, 12/28/04, 12/29/04 Part A, 12/30/04 PM, 12/31/04, /4/05	, 12/22/04,
中部大学校 Alter Alter Alter Alter Alter Alter Alter Alter Alter Alter Alter Alter Alter Alter Alter Alter Alter	Physical Configurations A fragments was identified f in Calculation NX-288 an 7/13/04, 7/25/04, 7/26/04 8/18&19/04, 8/26/04, 8/2 10/1/04 AM & PM, 10/5	or A-49 fuel rod segments were not located within the SFP for A, B, & C as defined by the scenario. However, SNM in the for for Physical Configuration D. The SNM fuel fragments are do ad on video (DVDs – 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04 7/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM 6/04, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05 2/18/05, 3/2/05, 3/23/05 and 3/25/05).	orm of fuel ocumented 4, 7/12/04, 4, 8/17/04, M, 9/30/04,

Action Items:

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Attachment 2

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Scenario Information:	Scenario No:	1-04-03c
	Title/Location:	Containers
	Objective/Description:	ISC – 3 - Green
	Physical Configuration:	A, B, C, & D
Inspection Process:	inspection of the defi	and determine if the disks adequately document the examination and ned areas. If the review is inconclusive, re-examine and inspect those utilizing binoculars and/or underwater video equipment, including ion of same.
Inspection Summary/I		
	7/27/04, 7/29/04, 8/4	9s (Disks – 7/11/04, 7/12/04, 7/13/04, 7/17/04, 7/19/04, 7/23/04, 7/25/04, 7/04, 8/15/04, 8/26/04, & 8/27/04) to determine if the disks adequately ation and inspection of the defined scenario areas.
Inspection Results:		
	 "as-is" condition for the Concluded that subject Additional video document PM, 12/10/04, 12/22 12/31/04, & 1/4/05 Pate DVD recorded on 4/20 Combination of the pate 	 b fully assess the content of the subject ISC. DVDs only provide the ne subject ISC on the date that the disk was made. ct ISC content is transitory. Immentation of subject ISC was made during 2004/2005 (Disks – 10/6/04 //04, 12/23/04 AM & PM, 12/28/04, 12/29/04 Part A, 12/30/04 PM, and A) to document fuel fragments. D/05 documents that this ISC is empty. Derevious existing video, the recent video taken in 2004/2005, and fuel a (Calculation NX-288) was adequate to assess the subject scenario.
Video Records:		
	7/19/04, 7/23/04, 7/25 • DVDs generated in la	ng Phase 1 of TBD-306: Disks dated 7/11/04, 7/12/04, 7/13/04, 7/17/04, 5/04, 7/27/04, 7/29/04, 8/4/04, 8/15/04, 8/26/04, & 8/27/04. ate 2004 and early 2005: Disks dated 10/6/04 PM, 12/10/04, 12/22/04, 12/28/04, 12/29/04 Part A, 12/30/04 PM, 12/31/04, 1/4/05 Part A &
Conclusion:	The three upgessures of f	A 40 fuel and commands were not located within the CER location for
	Physical Configurations A fragments was identified f in Calculation NX-288 ar 7/13/04, 7/25/04, 7/26/04 8/18&19/04, 8/26/04, 8/2 10/1/04 AM & PM, 10/5	or A-49 fuel rod segments were not located within the SFP location for A, B, & C as defined by the scenario. However, SNM in the form of fuel for Physical Configuration D. The SNM fuel fragments are documented id on video (DVDs – 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 7/27/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, /04, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 2/18/05, 3/2/05, 3/23/05 and 3/25/05).
Action Items:		

None

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Area/Item No.:

Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

PHYSICAL INSPECTION RESULTS		
Area/Item No.:	26	
Scenario Information:	Scenario No:	1-04-03d
	Title/Location:	Containers
	Objective/Description:	ISC – 4 - Yellow
	Physical Configuration:	A, B, C, & D
Inspection Process:	inspection of the define	and determine if the disks adequately document the examination and ned areas. If the review is inconclusive, re-examine and inspect those utilizing binoculars and/or underwater video equipment, including ion of same.
Inspection Summary/I	 Re-reviewed the DVD 7/27/04, 7/29/04, 8/4 	es (Disks – 7/11/04, 7/12/04, 7/13/04, 7/17/04, 7/19/04, 7/23/04, 7/25/04, /04, 8/15/04, 8/26/04, & 8/27/04) to determine if the disks adequately ation and inspection of the defined scenario areas.
Inspection Results:	 is" condition for the su Concluded that subjet Additional video dod 12/10/04, 12/22/04, 1 Part A) to document f DVD recorded on 4/20 Combination of the p 	a fully assess the content of the subject ISC. DVDs only provide the "as- ubject ISC on the date that the disk was made. ct ISC content is transitory. cumentation of subject ISC was made during 2004/2005 (Disks – 2/23/04 AM & PM, 12/29/04 Part A, 12/30/04 PM, 12/31/04, & 1/4/05 uel fragments. D/05 documents that this ISC is empty. previous existing video, the recent video taken in 2004/2005, and fuel c (Calculation NX-288) was adequate to assess the subject scenario.
Video Records:	7/13/04, 7/17/04, 7/1 8/27/04. • Video inspection DV	Os generated during Phase 1 of TBD-306: Disks dated 7/11/04, 7/12/04, 9/04, 7/23/04, 7/25/04, 7/27/04, 7/29/04, 8/4/04, 8/15/04, 8/26/04, & 2005 generated in late 2004 and early 2005: Disks dated 12/10/04, M & PM, 12/28/04, 12/29/04 Part A, 12/30/04 PM, 12/31/04, 1/4/05 Part
Conclusion:	Physical Configurations A fragments was identified to in Calculation NX-288 ar 7/13/04, 7/25/04, 7/26/04 8/18&19/04, 8/26/04, 8/2 10/1/04 AM & PM, 10/5	or A-49 fuel rod segments were not located within the SFP location for A, B, & C as defined by the scenario. However, SNM in the form of fuel for Physical Configuration D. The SNM fuel fragments are documented ad on video (DVDs – 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 7/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, 10/4, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 2/18/05, 3/2/05, 3/23/05, and 3/25/05)

1/28/05, 2/2/05, 2/17/05, 2/18/05, 3/2/05, 3/23/05 and 3/25/05).

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Attachment 2

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Action Items:

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Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	27		.	
Scenario Information	: Scenario No:	1-04-03e	an an an tha	*
	Title/Location:	Containers man.	1 (1). 1	
	Objective/Description:	ISC – 5 - Brown	· · · ·	
	Physical Configuration	: A, B, C, & D	· · · ·	
Inspection Process:	inspection of the def	and determine if the disks ade ined areas. If the review is inco s utilizing binoculars and/or u tion of same.	onclusive, re-examine and	d inspect those
Inspection Summary	 Re-reviewed the DVI 7/27/04, 7/29/04, 8/4 	Ds (Disks – 7/11/04, 7/12/04, 7/1 4/04, 8/15/04, 8/26/04, & 8/27/0 nation and inspection of the defin	3/04, 7/17/04, 7/19/04, 7/ 4) to determine if the dis	
Inspection Results:	 is" condition for the s Concluded that subjet Additional video doct PM, 12/10/04, 12/22, Part A, & 1/28/05) to DVD recorded on 4/2 Combination of the 	o fully assess the content of the subject ISC on the date that the d ect ISC content is transitory. umentation of subject ISC was n /04, 12/23/04 AM & PM, 12/29/0 document fuel fragments. 20/05 documents that this ISC is previous existing video, the rec of (Calculation NX-288) was adec	isk was made. nade during 2004/2005 (E 4 Part A, 12/30/04 PM, 1 empty. ent video taken in 2004/	0VDs - 10/6/04 2/31/04, 1/4/05 2005, and fuel
	7/19/04, 7/23/04, 7/2 • DVDS generated in 12/23/04 AM & PM,	ing Phase 1 of TBD-306: Disks (5/04) 7/27/04, 7/29/04, 8/4/04, 8/ late 2004 and early 2005: Disks 12/28/04, 12/29/04 Part A, 12/30	/15/04, 8/26/04 & 8/27/04 dated 10/6/04 PM, 12/1 /04 PM, 12/31/04, 1/4/05	0/04, 12/22/04,
	Physical Configurations fragments was identified in Calculation NX-288 a 7/13/04, 7/25/04, 7/26/04 8/18&19/04, 8/26/04, 8/2 10/1/04 AM & PM, 10/1 1/28/05, 2/2/05, 2/17/05,	for A-49 fuel rod segments were A, B, & C as defined by the scer for Physical Configuration D. T nd on video (DVDs – 10/22/03, 4,-7/27/04; 7/30/04, 8/10/04, 8/1 27/04; 8/31/04, 9/15/04, 9/17/04, 5/04; 10/6/04, 10/8/04, 12/10/0 2/18/05, 3/2/05, 3/23/05 and 3/2	nario. However, SNM in he SNM fuel fragments a 02/04, 03/04, 7/9/04, 7/ 1/04, 8/12/04, 8/15/04, 8/ 9/21/04, 9/28/04, 9/29/0 4, 12/28/04, 1/13/05, 1/ 5/05).	the form of fuel re documented 11/04, 7/12/04, 16/04, 8/17/04, 4 PM, 9/30/04,

Action Items:

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Attachment 2

Area/Item No.:	28	
Scenario Information:	Scenario No:	1-04-03f
	Title/Location:	Containers
	Objective/Description:	ISC – 6 - Orange
	Physical Configuration:	A, B, C, & D
Inspection Process:	inspection of the define	and determine if the disk adequately documents the examination and ned areas. If the review is inconclusive, re-examine and inspect those utilizing binoculars and/or underwater video equipment, including ion of same.
Inspection Summary/I		
	7/27/04, 7/29/04, 8/4	s (Disks – 7/11/04, 7/12/04, 7/13/04, 7/17/04, 7/19/04, 7/23/04, 7/25/04, /04, 8/15/04, 8/16/04, 8/26/04, 8/27/04, & 9/2/04) to determine if the ument the examination and inspection of the defined scenario areas.
Inspection Results:		
	is" condition for the su	fully assess the content of the subject ISC. DVDs only provide the "as- bject ISC on the date that the disk was made.
	 Additional video docu PM, 12/10/04, 12/22 1/4/05 Part A) to docu 	
	Combination of the p	0/05 documents that this ISC contains incore tubes. previous existing video, the recent video taken in 2004/2005, and fuel (Calculation NX-288) was adequate to assess the subject scenario.
Video Records:		
	7/19/04, 7/23/04, 7/2	ng Phase 1 of TBD-306: Disks dated 7/11/04, 7/12/04, 7/13/04, 7/17/04, 5/04, 7/27/04, 7/29/04, 8/4/04, 8/15/04, 8/16/04, 8/26/04, 8/27/04, &
		ate 2004 and early 2005: Disks dated 10/6/04 PM, 12/10/04, 12/22/04, 12/28/04, 12/29/04 Part A, 12/30/04 PM, 12/31/04, 1/4/05 Part A &
Conclusion:		
	Physical Configurations A fragments was identified f in Calculation NX-288 an 7/13/04, 7/25/04, 7/26/04 8/18&19/04, 8/26/04, 8/22 10/1/04 AM & PM, 10/5	br A-49 fuel rod segments were not located within the SFP location for A, B, & C as defined by the scenario. However, SNM in the form of fuel for Physical Configuration D. The SNM fuel fragments are documented at on video (DVDs $-$ 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 7/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 2/18/05, 3/2/05, 3/23/05 and 3/25/05).

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Action Items: None	
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Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/item No.:	29	
Scenario Information:	Scenario No:	1-04-03g
	Title/Location:	Containers
	Objective/Description:	ISC – 7 - Pink
	Physical Configuration:	A, B, C, & D
Inspection Process:	inspection of the define	and determine if the disks adequately document the examination and ned areas. If the review is inconclusive, re-examine and inspect those utilizing binoculars and/or underwater video equipment, including on of same.
Inspection Summary/		
	7/25/04, 7/27/04, 7/2	DS (Disks – 7/11/04, 7/12/04, 7/13/04, 7/17/04, 7/19/04, 7/23/04, 9/04, 8/4/04, 8/15/04, 8/26/04, & 8/27/04) to determine if the tapes the examination and inspection of the defined scenario areas.
Inspection Results:	 is" condition for the su Concluded that subject Additional video docu PM, 12/10/04, 12/22/ 1/4/05 Part A) to docu DVD recorded on 4/20 Combination of the p 	fully assess the content of the subject ISC. DVDs only provide the "as- abject ISC on the date that the disk was made. ct ISC content is transitory. mentation of subject ISC was made during 2004/2005 (Disks – 10/6/04 /04, 12/23/04 AM & PM, 12/29/04 Part A, 12/30/04 PM, 12/31/04, & iment fuel fragments. D/05 documents that this ISC contains incore tubes and GE test pins. revious existing video, the recent video taken in 2004/2005, and fuel (Calculation NX-288) was adequate to assess the subject scenario.
Video Records:	7/19/04, 7/23/04, 7/25 • DVDs generated in la	ng Phase 1 of TBD-306: Disks dated 7/11/04, 7/12/04, 7/13/04, 7/17/04, 5/04, 7/27/04, 7/29/04, 8/4/04, 8/15/04, 8/26/04, & 8/27/04. ate 2004 and early 2005: Disks dated 10/6/04 PM, 12/10/04, 12/22/04, 12/28/04, 12/29/04 Part A, 12/30/04 PM, 12/31/04, 1/4/05 Part A &
Conclusion:	Physical Configurations A fragments was identified f in Calculation NX-288 an 7/13/04, 7/25/04, 7/26/04, 8/18&19/04, 8/26/04, 8/27 10/1/04 AM & PM, 10/5	or A-49 fuel rod segments were not located within the SFP location for A, B, & C as defined by the scenario. However, SNM in the form of fuel for Physical Configuration D. The SNM fuel fragments are documented d on video (DVDs – 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 7/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, 7/04, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 2/18/05, 3/2/05, 3/23/05 and 3/25/05).

Action Items:

Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	30			
Scenario Information:	: Scenario No:	1-04-03h		· .:
	Title/Location:	Containers	· · · · · · · ·	
	Objective/Description:	ISC – 8 - Purple	_ *.	
	Physical Configuration:	A, B, C, & D	· · · · ·	
Inspection Process:	inspection of the defi	and determine if the disks adeo ined areas. If the review is inco s utilizing binoculars and/or ur tion of same.	nclusive, re-examine and i	inspect those
Inspection Summary/	Details:		• • • • • •	·
	7/27/04, 7/29/04, 8/4	Ds (Disks – 7/11/04, 7/12/04, 7/13 1/04, 8/15/04, 8/26/04, & 8/27/04 nation and inspection of the define	+) to determine if the disk	
Inspection Results:			: • · ·	
	 "as-is" condition for th Concluded that subje Additional vide docur PM, 12/10/04, 12/22 12/31/04, & 1/4/05 Pa DVD recorded on 4/2 Combination of the pathology 	o fully assess the content of the ne subject ISC on the date that th ect ISC content is transitory. mentation of subject ISC was ma 2/04, 12/23/04 AM & PM, 12/2 art A) to document fuel fragments 0/05 documents that this ISC is e previous existing video, the rece t (Calculation NX-288) was adequ	e disk was made. ade during 2004/2005 (Dis 8/04, 12/29/04 Part A, 1 5. empty. ent video taken in 2004/20	sks – 10/6/04 12/30/04 PM, 005, and fuel
Video Records:				
	7/19/04, 7/23/04, 7/2 • DVDs generated in I	ng Phase 1 of TBD-306: Disks d 5/04, 7/27/04, 7/29/04, 8/4/04, 8/ ate 2004 and early 2005: Disks 12/28/04, 12/29/04 Part A, 12/	15/04, 8/26/04, & 8/27/04. dated 10/6/04 PM, 12/10/0 /30/04 PM, 12/31/04, 1/4/	04, 12/22/04, /05 Part A &
Conclusion:		rogas bai ken Steller i kar i	The second second	a 11 - 140 ¹
	Physical Configurations A fragments was identified in Calculation NX-288 ar 7/13/04, 7/25/04, 7/26/04 8/18&19/04, 8/26/04, 8/2 10/1/04 AM & PM, 10/5	or A-49 fuel rod segments were A, B, & C as defined by the scen for Physical Configuration D. Th nd on video (DVDs – 10/22/03, 4, 7/27/04, 7/30/04, 8/10/04, 8/11 7/04, 8/31/04, 9/15/04, 9/17/04, 5/04, 10/6/04, 10/8/04, 12/10/04 2/18/05, 3/2/05, 3/23/05 and 3/25	ario. However, SNM in the ne SNM fuel fragments are 02/04, 03/04, 7/9/04, 7/11 /04, 8/12/04, 8/15/04, 8/16 9/21/04, 9/28/04, 9/29/04 , 12/28/04, 1/13/05, 1/14 5/05).	e form of fuel documented 1/04, 7/12/04, 5/04, 8/17/04, PM, 9/30/04,
Action Items:	Nezz		· . ·	

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Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	31	
Scenario Information:	Scenario No:	1-04-03i
	Title/Location:	Containers
	Objective/Description:	ISC – 9 – Red/White
	Physical Configuration:	A, B, C, & D
Inspection Process:	inspection of the define	and determine if the disks adequately document the examination and ned areas. If the review is inconclusive, re-examine and inspect those utilizing binoculars and/or underwater video equipment, including on of same.
Inspection Summary/	Details:	:
	7/27/04, 7/29/04, 8/4	s (Disks – 7/11/04, 7/12/04, 7/13/04, 7/17/04, 7/19/04, 7/23/04, 7/25/04, /04, 8/15/04, 8/26/04, & 8/27/04) to determine if the disks adequately ation and inspection of the defined scenario areas.
Inspection Results:	 Re-reviewed DVDs to fully assess the content of the subject ISC. DVDs only provide the "as-is" condition for the subject ISC on the date that the disk was made. Concluded that subject ISC content is transitory. Additional video documentation of subject ISC was made during 2004/2005 (Disks – 12/10/04, 12/22/04; 12/23/04 AM & PM, 12/29/04 Part A, 12/30/04 PM, 12/31/04, & 1/4/05 Part A) to document fuel fragments. DVD recorded on 4/20/05 documents that this ISC is empty. Combination of the previous existing video, the recent video taken in 2004/2005, and fuel fragment assessment (Calculation NX-288) was adequate to assess the subject scenario. 	
Video Records:	7/17/04, 7/19/04, 7/23 • DVDs generated in	ring Phase 1 of TBD-306: Disks dated 7/11/04, 7/12/04, 7/13/04, 5/04, 7/25/04, 7/27/04, 7/29/04, 8/4/04, 8/15/04, 8/26/04, & 8/27/04. 1 late 2004 and early 2005: Disks dated 12/10/04, 12/22/04, 2/29/04 Part A, 12/30/04 PM, 12/31/04, 1/4/05 Part A & 4/20/05.
Conclusion: Action Items:	Physical Configurations A fragments was identified f in Calculation NX-288 an 7/13/04, 7/25/04, 7/26/04, 8/18&19/04, 8/26/04, 8/2 10/1/04 AM & PM, 10/5	or A-49 fuel rod segments were not located within the SFP location for A, B, & C as defined by the scenario. However, SNM in the form of fuel for Physical Configuration D. The SNM fuel fragments are documented d on video (DVDs – 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 7/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, /04, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 2/18/05, 3/2/05, 3/23/05 and 3/25/05).

None

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Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	32			ta a ta
Scenario Information:	Scenario No:	1-04-03j	· · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
	Title/Location:	Containers	. · · ·	
	Objective/Description:	ISC – 10 – Blue/White	· •.	
	Physical Configuration	: A, B, C, & D		
Inspection Process:	inspection of the def areas and locations recorded documenta	and determine if the disks ade ined areas. If the review is inco s utilizing binoculars and/or u tion of same.	onclusive, re-examine and	d inspect those
Inspection Summary/	• Re-reviewed the DVI 7/27/04, 7/29/04, 8/	Ds (Disks – 7/11/04, 7/12/04, 7/1 4/04, 8/15/04, 8/16/04, 8/26/04 It the examination and inspection	, & 8/27/04) to determin	ne if the disks
Inspection Results:				
	 "as-is" condition for f Concluded that subje Additional videotapin 12/22/04, 12/23/04 A document fuel fragm DVD recorded on 4/2 Combination of the 	to fully assess the content of the the subject ISC on the date that the ect ISC content is transitory. Ing of subject ISC was made AM & PM, 12/29/04 Part A, 12/3 ents. 20/05 documents that this ISC co previous existing video, the rec at (Calculation NX-288) was adeq	the disk was made. during 2004/2005 (Disk 30/04 PM, 12/31/04, & 1/ ontains stellite balls. ent video taken in 2004/	(s – 12/10/04, 4/05 Part A) to 2005, and fuel
Video Records:			÷	
	7/19/04, 7/23/04, 7/2 DVD generated in 12/23/04 AM & PM,	ing Phase 1 of TBD-306: Disks of 5/04, 7/27/04, 7/29/04, 8/4/04, 8/4/04, 8/4/04, 8/4/04, 8/4/04, 8/2000 and early 2000 and early 2000 and 2/29/04 Part A, 12/30/04 PM, 12	/15/04, 8/16/04, 8/26/04, 8 5: Disks dated 12/10/	& 8/27/04. /04, 12/22/04,
Conclusion:	The three unaccounted t	for A-49 fuel rod segments were	e not located within the S	FP location for
(1, 2, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3,	Physical Configurations <i>J</i> fragments was identified in Calculation NX-288 a 7/13/04, 7/25/04, 7/26/04 8/18&19/04, 8/26/04, 8/2 10/1/04 AM & PM, 10/9 1/28/05, 2/2/05, 2/17/05,	A, B, & C as defined by the scer for Physical Configuration D. T nd on video (DVDs – 10/22/03, 4, 7/27/04, 7/30/04, 8/10/04, 8/1 27/04, 8/31/04, 9/15/04, 9/17/04, 5/04, 10/6/04, 10/8/04, 12/10/0 2/18/05, 3/2/05, 3/23/05 and 3/2	nario. However, SNM in 1 he SNM fuel fragments a 02/04, 03/04, 7/9/04, 7/ 1/04, 8/12/04, 8/15/04, 8/ 9/21/04, 9/28/04, 9/29/0 4, 12/28/04, 1/13/05, 1/	the form of fuel re documented 11/04, 7/12/04, 16/04, 8/17/04, 4 PM, 9/30/04,

Action Items:

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• None

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Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	33	
Scenario Information:	Scenario No:	1-04-03k
	Title/Location:	Containers
	Objective/Description:	ISC – 11 – Green/White
	Physical Configuration:	A, B, C, & D
Inspection Process:	inspection of the defi	and determine if the disks adequately document the examination and ned areas. If the review is inconclusive, re-examine and inspect those utilizing binoculars and/or underwater video equipment, including ion of same.
Inspection Summary/I		
	7/27/04, 7/29/04, 8/4	Ds (Disks – 7/11/04, 7/12/04, 7/13/04, 7/17/04, 7/19/04, 7/23/04, 7/25/04, /04, 8/14/04, 8/15/04, 8/16/04, 8/26/04, & 8/27/04) to determine if the ument the examination and inspection of the defined scenario areas.
Inspection Results:	 the "as-is" condition for Concluded that subject Additional video door 12/10/04, 12/22/04, & 1/4/05 Part A) to door 12/10/05 Part A) to door DVD recorded on 4/20 Combination of the provided on the provi	Disks) to fully assess the content of the subject ISC. DVDs only provide or the subject ISC on the date that the disk was made. ct ISC content is transitory. cumentation of subject ISC was made during 2004/2005 (Disks – 12/23/04 AM & PM, 12/29/04 Part A, 12/30/04 PM, 12/31/04, ocument fuel fragments. 0/05 documents that this ISC contains irradiated hardware. previous existing video, the recent video taken in 2004/2005, and fuel a (Calculation NX-288) was adequate to assess the subject scenario.
Video Records:	7/19/04, 7/23/04, 7/2 8/27/04. • DVDs generated ir	ng Phase 1 of TBD-306: Disks dated 7/11/04, 7/12/04, 7/13/04, 7/17/04, 25/04, 7/27/04, 7/29/04, 8/4/04, 8/14/04, 8/15/04, 8/16/04, 8/26/04, & 1 late 2004 and early 2005: Disks dated 12/10/04, 12/22/04, 2/29/04 Part A, 12/30/04 PM, 12/31/04, 1/4/05 Part A & 4/20/05.
Conclusion:	The three constants of f	
	Physical Configurations A fragments was identified in in Calculation NX-288 ar 7/13/04, 7/25/04, 7/26/04 8/18&19/04, 8/26/04, 8/2 10/1/04 AM & PM, 10/5	or A-49 fuel rod segments were not located within the SFP location for A, B, & C as defined by the scenario. However, SNM in the form of fuel for Physical Configuration D. The SNM fuel fragments are documented ad on video (DVDs – 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 7/27/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, 7/04, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 2/18/05, 3/2/05, 3/23/05 and 3/25/05).
Action Items:	Naza	

• None

Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	34			· .
Scenario Information	: Scenario No:	1-04-031		
	Title/Location:	Containers		
	Objective/Description:	ISC – 12 – Yellow/White		
	Physical Configuration:	: A, B, C, & D		
Inspection Process:			÷	
	inspection of the def	and determine if the disks adequately ined areas. If the review is inconclusive s utilizing binoculars and/or underwat tion of same.	e, re-examine and	inspect those
Inspection Summary/	Details:		······································	14 - 1 7
	7/27/04, 7/29/04, 8/4	Ds (Disks – 7/11/04, 7/12/04, 7/13/04, 7/ 1/04, 8/14/04, 8/15/04, 8/16/04, 8/26/04 cument the examination and inspection of	, & 8/27/04) to de	termine if the
Inspection Results:			• 1. 1	•
	 "as-is" condition for the Concluded that subjete Additional video do 12/10/04, 12/22/04, 1/4/05 Part A, & 2/2/0 DVD recorded on 4/2 Combination of the part of the	to fully assess the content of the subject the subject ISC on the date that the disk vect ISC content is transitory. cumentation of subject ISC was made 12/23/04 AM & PM, 12/29/04 Par 05) to document fuel fragments. 20/05 documents that this ISC is empty. previous existing video, the recent vide t (Calculation NX-288) was adequate to a	was made. de during 2004/20 t A, 12/30/04 P to taken in 2004/2	005 (Disks – M, 12/31/04, 005, and fuel
Video Records:				
	7/19/04, 7/23/04, 7/ 8/27/04. • DVDs generated i	ing Phase 1 of TBD-306: Disks dated 7/ 25/04, 7/27/04, 7/29/04, 8/4/04, 8/14/0 n late 2004 and early 2005: Disk 12/29/04 Part A, 12/30/04 PM, 12/31/04,	4, 8/15/04, 8/16/0 <s 0<="" 10="" 12="" dated="" th=""><th>4, 8/26/04, & 04, 12/22/04, 05 & 4/20/05.</th></s>	4, 8/26/04, & 04, 12/22/04, 05 & 4/20/05.
	The three unaccounted f Physical Configurations / fragments was identified in Calculation NX-288 at 7/13/04, 7/25/04, 7/26/04 8/18&19/04, 8/26/04, 8/2 10/1/04 AM & PM, 10/5	for A-49 fuel rod segments were not loc A, B, & C as defined by the scenario. H for Physical Configuration D. The SNM nd on video (DVDs – 10/22/03, 02/04, 4, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/1 27/04, 8/31/04, 9/15/04, 9/17/04, 8/11/04, 5/04, 10/6/04, 10/8/04, 12/10/04, 12/28 2/18/05, 3/2/05, 3/23/05 and 3/25/05).	ated within the SF lowever, SNM in th l fuel fragments are 03/04, 7/9/04, 7/1 12/04, 8/15/04, 8/1 1, 9/28/04, 9/29/04	ne form of fuel e documented 1/04, 7/12/04, 6/04, 8/17/04, PM, 9/30/04,

Action Items:

• None

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Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	35	
Scenario Information	Scenario No:	1-04-03m
	Title/Location:	Containers
	Objective/Description:	ISC – 13 – Brown/White
	Physical Configuration:	A, B, C, & D
Inspection Process:	 Re-review the DVDs and determine if the disks adequately document the examination and inspection of the defined areas. If the review is inconclusive, re-examine and inspect those areas and locations utilizing binoculars and/or underwater video equipment, including recorded documentation of same. 	
Inspection Summary/		
	 Re-reviewed the DVDs (Disks – 7/11/04, 7/12/04, 7/13/04, 7/17/04, 7/19/04, 7/23/04, 7/25/04, 7/27/04, 7/29/04, 8/4/04, 8/15/04, 8/16/04, 8/26/04; & 8/27/04) to determine if the disks adequately document the examination and inspection of the defined scenario areas. 	
Inspection Results:	 Re-reviewed DVDs to fully assess the content of the subject ISC. DVDs only provide the "as-is" condition for the subject ISC on the date that the disk was made. Concluded that subject ISC content is transitory. Additional video documentation of subject ISC was made during 2004/2005 (Disks – 12/10/04, 12/22/04, 12/23/04 AM & PM, 12/29/04 Parts A & B, 12/30/04 PM, 12/31/04, & 1/4/05 Part A) to document fuel fragments. DVD recorded on 4/20/05 documents that this ISC is empty. Combination of the previous existing video, the recent video taken in 2004/2005, and fuel fragment assessment (Calculation NX-288) was adequate to assess the subject scenario. 	
Video Records:	7/19/04, 7/23/04, 7/25 • DVDs in late 2004 a	ng Phase 1 of TBD-306: Disks dated 7/11/04, 7/12/04, 7/13/04, 7/17/04, 5/04, 7/27/04, 7/29/04, 8/4/04, 8/15/04, 8/16/04, 8/26/04, & 8/27/04. and early 2005: Disks dated 12/10/04, 12/22/04, 12/23/04 AM & PM, , 12/30/04 PM, 12/31/04, 1/4/05 Part A & 4/20/05.
Conclusion:	The three unaccounted for	or A-49 fuel rod segments were not located within the SFP location for
•	Physical Configurations A fragments was identified a in Calculation NX-288 ar 7/13/04, 7/25/04, 7/26/04 8/18&19/04, 8/26/04, 8/2 10/1/04 AM & PM, 10/5	A, B, & C as defined by the scenario. However, SNM in the form of fuel for Physical Configuration D. The SNM fuel fragments are documented and on video (DVDs $-$ 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 7/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, 7/04, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 2/18/05, 3/2/05, 3/23/05 and 3/25/05).
Action Items:	None	

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Attachment 2

Area/Item No.:	36	
Scenario Information:	Scenario No:	1-04-03n
	Title/Location:	Containers
	Objective/Description:	ISC – 14 – Orange/White
	Physical Configuration:	A, B, C, & D
Inspection Process:	inspection of the define	and determine if the disks adequately document the examination and ned areas. If the review is inconclusive, re-examine and inspect those utilizing binoculars and/or underwater video equipment, including ion of same.
Inspection Summary/I		
	7/26/04, 7/27/04, 7/29	s (Disks – 7/11/04, 7/12/04, 7/13/04, 7/17/04, 7/19/04, 7/23/04, 7/25/04, 6/04, 8/4/04, 8/14/04, 8/15/04, 8/16/04, 8/26/04, & 8/27/04) to determine by document the examination and inspection of the defined scenario
Inspection Results:		fully process the content of the cubicat ICC DVDs and provide the fee
	 is" condition for the subject Concluded that subject Additional video door 12/10/04, 12/22/04, & 1/4/05 Part A) to door DVD recorded on 4/20 Combination of the provided on the provided o	fully assess the content of the subject ISC. DVDs only provide the "as- abject ISC on the date that the disks were made. ct ISC content is transitory. sumentation of subject ISC was made during 2004/2005 (DVDs – 12/23/04 AM & PM, 12/29/04 Part A, 12/30/04 PM, 12/31/04, cument fuel fragments. D/05 documents that this ISC is empty. previous existing video, the recent video taken in 2004/2005, and fuel (Calculation NX-288) was adequate to assess the subject scenario.
Video Records:	- DVDa gaparated duri	The set of TRD 206; Dieke deted 7/11/04 7/12/04 7/12/04 7/17/04
	7/19/04, 7/23/04, 7/2 8/26/04, & 8/27/04. • DVDs generated in	ng Phase 1 of TBD-306: Disks dated 7/11/04, 7/12/04, 7/13/04, 7/17/04, 25/04, 7/26/04, 7/27/04, 7/29/04, 8/4/04, 8/14/04, 8/15/04, 8/16/04, a late 2004 and early 2005: Disks dated 12/10/04, 12/22/04, 2/29/04 Part A, 12/30/04 PM, 12/31/04, 1/4/05 Part A & 4/20/05.
Conclusion:		
	Physical Configurations A fragments was identified f in Calculation NX-288 an 7/13/04, 7/25/04, 7/26/04 8/18&19/04, 8/26/04, 8/27 10/1/04 AM & PM, 10/5	or A-49 fuel rod segments were not located within the SFP location for A, B, & C as defined by the scenario. However, SNM in the form of fuel for Physical Configuration D. The SNM fuel fragments are documented d on video (DVDs – 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 7/27/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, /04, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 2/18/05, 3/2/05, 3/23/05 and 3/25/05).

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Attachment 2

Action Items:

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None

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	37	· · · ·	
Scenario Information: Scenario No:		1-04-030 C 1-2	
	Title/Location:	Containers and the second seco	
	Objective/Description:	ISC – 15 – Pink/White	
	Physical Configuration:	A, B, C, & D (1) .	
Inspection Process:	inspection of the defin	and determine if the disks adequately document the examination and ned areas. If the review is inconclusive, re-examine and inspect those utilizing binoculars and/or underwater video equipment, including on of same.	
Inspection Summary/			
	7/27/04, 7/29/04, 8/4/	s (Disks – 7/11/04, 7/12/04, 7/13/04, 7/17/04, 7/19/04, 7/23/04, 7/25/04, 04, 8/14/04, 8/15/04, 8/16/04, 8/26/04, & 8/27/04) to determine if the ument the examination and inspection of the defined scenario areas.	
Inspection Results:			
	is" condition for the sulConcluded that subject	fully assess the content of the subject ISC. DVDs only provide the "as- ibject ISC on the date that the disks were made. of ISC content is transitory.	
	 Additional video documentation of subject ISC was made during 2004/2005 (Disks – 12/10/04, 12/22/04, 12/23/04 AM & PM, 12/29/04 Part A, 12/30/04 PM, 12/31/04, 1/4/05 Part A, & 1/28/05) to document fuel fragments. 		
	Combination of the pr	0/05 documents that this ISC is empty. revious existing video, the recent video taken in 2004/2005, and fuel (Calculation NX-288) was adequate to assess the subject scenario.	
Video Records:			
		ng Phase 1 of TBD-306: Disks dated 7/11/04, 7/12/04, 7/13/04, 7/17/04, 5/04, 7/27/04, 7/29/04, 8/4/04, 8/14/04, 8/15/04, 8/16/04, 8/26/04, &	
	DVDs generated in lat	te 2004 and early 2005: Disks dated 12/10/04, 12/22/04, 12/23/04 AM & 12/30/04 PM, 12/31/04, 1/4/05 Part A, 1/28/05 & 4/20/05.	
Conclusion:			
	Physical Configurations A, fragments was identified for in Calculation NX-288 and 7/13/04, 7/25/04, 7/26/04, 8/18&19/04, 8/26/04, 8/27 10/1/04 AM & PM, 10/5/	or A-49 fuel rod segments were not located within the SFP location for b, B, & C as defined by the scenario. However, SNM in the form of fuel for Physical Configuration D. The SNM fuel fragments are documented d on video (DVDs – 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 7/27/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, 7/04, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 2/18/05, 3/2/05, 3/23/05 and 3/25/05).	

Action Items:

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	38	
Scenario Information:	Scenario No:	1-04-03p
	Title/Location:	Containers
	Objective/Description:	ISC – 16 – Purple/White
	Physical Configuration:	A, B, C, & D
Inspection Process:	 Re-review the DVDs and determine if the disks adequately document the examination and inspection of the defined areas. If the review is inconclusive, re-examine and inspect those areas and locations utilizing binoculars and/or underwater video equipment, including recorded documentation of same. 	
Inspection Summary/I		
	7/27/04, 7/29/04; 8/4/	s (Disks – 7/11/04, 7/12/04, 7/13/04, 7/17/04, 7/19/04, 7/23/04, 7/25/04, /04, 8/14/04, 8/15/04, 8/16/04, 8/26/04, & 8/27/04) to determine if the ument the examination and inspection of the defined scenario areas.
Inspection Results:	 is" condition for the su Concluded that subject Additional video doct 12/10/04, 12/22/04, & 1/4/05 Part A) to do DVD recorded on 4/20 Combination of the p 	fully assess the content of the subject ISC. DVDs only provide the "as- abject ISC on the date that the disks were made. ct ISC content is transitory. sumentation of subject ISC was made during 2004/2005 (Disks – 12/23/04 AM & PM, 12/29/04 Part A, 12/30/04 PM, 12/31/04, cument fuel fragments. D/05 documents that this ISC contains irradiated hardware. revious existing video, the recent video taken in 2004/2005, and fuel (Calculation NX-288) was adequate to assess the subject scenario.
Video Records:	7/19/04, 7/23/04, 7/2 8/27/04. • DVDs generated in	ng Phase 1 of TBD-306: Disks dated 7/11/04, 7/12/04, 7/13/04, 7/17/04, 5/04, 7/27/04, 7/29/04, 8/4/04, 8/14/04, 8/15/04, 8/16/04, 8/26/04, & a late 2004 and early 2005: Disks dated 12/10/04, 12/22/04, 2/29/04 Part A, 12/30/04 PM, 12/31/04, 1/4/05 Part A & 4/20/05.
Conclusion:		
	Physical Configurations A fragments was identified f in Calculation NX-288 an 7/13/04, 7/25/04, 7/26/04, 8/18&19/04, 8/26/04, 8/27 10/1/04 AM & PM, 10/5	or A-49 fuel rod segments were not located within the SFP location for a, B, & C as defined by the scenario. However, SNM in the form of fuel for Physical Configuration D. The SNM fuel fragments are documented d on video (DVDs – 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, a, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 7/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, 7/04, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 2/18/05, 3/2/05, 3/23/05 and 3/25/05).
Action Items:		

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Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	39		· · · .:	:
Scenario Information:	Scenario No:	1-04-03q	· · · · · · · · · · · · · · · · · · ·	
	Title/Location:	Containers		
	Objective/Description:	Fuel Transfer Basket A & Und	er Basket	
	Physical Configuration:	A, B, C, & D	n. transf	
Inspection Process:	document the examin re-examine and insp	nation and inspection of the defi	/04) to determine if the disks adequa ined areas. If the review is inconclus s utilizing binoculars and/or underw of same.	sive,
Inspection Summary/I			equately document the examination	and
Inspection Results:	• The subject DVDs of were not there.	·	assurance that the objects (A, B, C, &	Ţ
			n was performed. The existing I dequate to assess the subject scena	
Video Records:	A summary compilat Transfer Basket B, 4	ion DVD (Title: 22 - Transfer	dated 8/4/04, 8/5/04, & 8/17/04. Basket, 39 – Transfer Basket A, 4 ade from the Phase 1 of TBD-306 DV ss this scenario.	10 – /Ds.
Conclusion:		or A-49 fuel rod segments and/ igurations A, B, C, & D as defin	or SNM were not located within the sed by the scenario.	SFP
Action Items:	None		10^{-1} , d_{1}^{-1} ,	

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	40		
Scenario Information	: Scenario No:	1-04-03r	
	Title/Location:	Containers	
	Objective/Description:	Fuel Transfer Basket B & Under Basket	
	Physical Configuration:	A, B, C, & D	
Inspection Process:	document the examir re-examine and insp	(Disk – 8/4/04, 8/5/04, & 8/17/04) to determine if the disks adequately nation and inspection of the defined areas. If the review is inconclusive, ect those areas and locations utilizing binoculars and/or underwater uding recorded documentation of same.	
Inspection Summary/	 Details: Re-reviewed the DVDs to determine if the disks adequately document the examination and inspection of the defined scenario areas. 		
Inspection Results:	 The subject disks of were not there. No additional examination of the state of	o fully assess the Fuel Transfer Basket B & Under Basket. the area provided reasonable assurance that the objects (A, B, C, & D) ination or video documentation was performed. The existing Fuel Under Basket area disks were adequate to assess the subject scenario.	
Video Records:	A summary compilat Transfer Basket B, 4	ng Phase 1 of TBD-306: Disks dated 8/4/04, 8/5/04, & 8/17/04. ion DVD (Title: 22 – Transfer Basket, 39 – Transfer Basket A, 40 – 1 – Transfer Basket C) was made from the Phase 1 of TBD-306 DVDs. specifically developed to address this scenario.	
Conclusion:		or A-49 fuel rod segments and/or SNM were not located within the SFP igurations A, B, C, & D as defined by the scenario.	
Action Items:	None		

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	41			· · · · ·
Scenario Information	: Scenario No:	1-04-03s	····	an an th
	Title/Location:	Containers		
	Objective/Description:	Euel Transfer Basket C & Unde	er Basket	
	Physical Configuration:	: A, B, C, & D		
	the examination and examine and inspect equipment, including	(Disk – 8/5/04 & 8/17/04) to dete d inspection of the defined are t those areas and locations utiliz recorded documentation of same	as. If the review is ring binoculars and/or e.	inconclusive, re-
Inspection Summary/		Ds to determine if the disks ade	equately document the	e examination and
	inspection of the defi	ned scenario areas.	* 2 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 -	
Video Records: Conclusion: Action Items:	 The subject disks of were not there. No additional exam Transfer Basket C & DVDs generated duri A summary compilat 40 – Transfer Basket DVDs. This compilat DVDs. This compilat The three unaccounted f location for Physical Con None 	o fully assess the Fuel Transfer E the area provided reasonable as ination or video documentation Under Basket area disks were ad the second second second second second ing Phase 1 of TBD-306: Disks d ation DVD (Title: 22 – Transfer B, 41 – Transfer Basket C) we tion was specifically developed to the second second second second second figurations A, B, C, & D as define the second seco	ssurance that the obje n was performed. dequate to assess the lated 8/5/04 & 8/17/04 fer Basket, 39 – Tr as made from the Ph o address this scenario or SNM were not located by the scenario.	ects (A, B, C, & D) The existing Fuel subject scenario. ansfer Basket A, ase 1 of TBD-306 b. ted within the SFP
		がある。 「「「「」」、「」」、「」」、「」、「」、「」、「」、「」、「」、「」、「」、「	Contraction (1997)	

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	42	
Scenario Information	: Scenario No:	1-04-03t
	Title/Location:	Containers
	Objective/Description:	UD6N Fuel Assembly Box (including contents)
	Physical Configuration:	A, B, C, & D
Inspection Process:	 Re-review the DVDs (Disks 8/13/03, 8/4/04, 8/8/04 AM & PM, 8/9/04 AM & PM, 8/10/04, 8/11/04, 8/12/04 AM & PM, 8/13/04, & 8/17/04) and determine if the disks adequately document the examination and inspection of UD6N and its container. If the review is inconclusive, re-examine and inspect UD6N and its container utilizing binoculars and/or underwater video equipment, including recorded documentation of same. 	
Inspection Summary	 Re-reviewed the DVDs to determine if the disks adequately document the examination and inspection of the defined scenario areas. 	
Inspection Results:	 "as-is" condition for th Concluded that subje SFP32 on 8/13/04. No additional examination 	o fully assess the content of the UD6N container. DVDs only provide the ne subject container on the date that the disks were made. Act container content was transitory until it was finally moved to location ation or video documentation was performed. Video is adequate to assess the subject scenario.
Video Records:	8/9/04 AM & PM, 8/10A summary compilati	ng Phase 1 of TBD-306: Disks dated 8/13/03, 8/4/04, 8/8/04 AM & PM, D/04, 8/11/04, 8/12/04 AM & PM, 8/13/04, & 8/17/04. on DVD (Title: 42 – UD6N Assembly Box) was made from the Phase 1 he compilation was specifically developed to address this scenario.
Conclusion:	The three unaccounted for A-49 fuel rod segments were not located within the SFP location for Physical Configurations A, B, & C as defined by the scenario. However, SNM in the form of fuel fragments was identified for Physical Configuration D. They are not part of fuel assembly UD6N, but were stored in the original UD6N storage box until the subject assembly and loose fuel rods were transferred to a new storage box. The SNM fuel fragments specifically associated with the UD6N storage box are documented in Calculation NX-288 and on video (Disks – 8/15/04, 8/16/04, 8/17/04, 9/10/04, 9/14/04, 9/15/04, 9/17/04, 9/28/04, 9/29/04 AM & PM, 9/30/04, 10/1/04 AM & PM, 10/5/04, 10/6/04, & 1/14/05).	
Action Items:	None	

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Attachment 2

Area/Item No.:	43		
Scenario Information:	Scenario No:	1-04-03u	
	Title/Location:	Containers	
	Objective/Description:	Failed Fuel Cans (4) (Renamed Storage Containers $1 - 4$. The Storage Containers $(1 - 4)$ are located in the SFP.	
	Physical Configuration:	A, B, C, & D	
Inspection Process:	 Failed Fuel Cans (4) (Renamed Storage Containers 1 – 4). Re-review the DVDs (Disks 10/22/03, 7/11/04, 7/13/04, 7/15/04, 7/17/04, 7/19/04, 7/23/04, 7/24/04, 7/25/04, 7/26/04, 7/27/04, 7/29/04, & 8/7/04 AM) and determine if the disks adequately document the examination and inspection of the defined areas. If the review is inconclusive, re-examine and inspect those areas/locations utilizing binoculars and/or underwater video equipment, including recorded documentation of same. 		
Inspection Summary/			
	 Re-reviewed the DVI inspection of the definition 	Ds to determine if the disks adequately document the examination and ned scenario areas.	
Inspection Results:	 the "as-is" condition a made. Concluded that subje One of the Storage C Three other cans wer Additional video docu ISCs was made durin Combination of the p 	o fully assess the content of the Storage Cans (4). DVDs only provide and content for the subject Storage Can on the date that the disks were ct Storage Can content is transitory. ans has been filled with cut-up incore detectors. re empty (documented on disk dated 1/5/05). umentation of subject Storage Can content and subsequent transfer to the 2004/2005 (DVDs) and is addressed in scenarios 23 - 38. previous existing video, the recent video taken in 2004/2005, and fuel t (Calculation NX-288) was adequate to assess the subject scenario.	
Video Records:	7/15/04, 7/17/04, 7/19 & 2/18/05. • A summary compilati	ring Phase 1 of TBD-306: Disks dated 10/22/03, 7/11/04, 7/13/04, 9/04, 7/23/04, 7/24/04, 7/25/04, 7/26/04, 7/27/04, 7/29/04, 8/7/04, 1/5/05 ion DVD (Title: 43 – Failed Fuel Cans (Storage Cans)) was made from 806 disks. This compilation specifically addresses this scenario.	
Conclusion:	Physical Configurations A fragments was identified in Calculation NX-288 ar 7/13/04, 7/25/04, 7/26/04 8/18&19/04, 8/26/04, 8/2 10/1/04 AM & PM, 10/5	or A-49 fuel rod segments were not located within the SFP location for A, B, & C as defined by the scenario. However, SNM in the form of fuel for Physical Configuration D. The SNM fuel fragments are documented nd on video (DVDs – 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 7/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, 5/04, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 2/18/05, 3/2/05, 3/23/05 and 3/25/05).	

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Action Items:

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	44	
Scenario Information	: Scenario No:	1-04-03v
	Title/Location:	Containers
	Objective/Description:	Central Storage Container (CSC), the addition of the Fuel Fragment Container (FFC) and the Unclad Fuel Fragment Container (UFFC)).
	Physical Configuration:	: A, B, C, & D
Inspection Process:	determine if the disk areas. If the review	s (Disks – "DVD dated 8/13/03, 10/22/03, 7/11/04, & 8/26/04) and as adequately document the examination and inspection of the defined is inconclusive, re-examine and inspect those areas/locations utilizing derwater video equipment, including recorded documentation of same.
Inspection Summary/		Ds to determine if the disks adequately document the examination and ned scenario areas.
Inspection Results: Video Records:	 Re-reviewed DVDs to assess the content of the Central Storage Container. DVDs provide the "as-is" condition and content for the container on the date that the disks were made. Concluded that subject Central Storage Container content is transitory. Final video documentation of subject Central Storage Container content and subsequent transfer to ISCs was made during 2004/2005 and is addressed in scenarios 23 - 38. Fuel Fragment Container (Fuel Frag) and the Unclad Fuel Fragment Container (UFFC)) current content was documented on DVDs dated 1/14/05, 2/18/05 & 3/25/05. Combination of the previous existing video, the recent video taken in 2004/2005, and fuel fragment assessment (Calculation NX-288) was adequate to assess the subject scenario. DVDs generated during Phase 1 of TBD-306: Disks dated 8/13/03, 10/22/03, 7/11/04, & 8/26/04. DVD generated in 2005: Disk 1/8/05, 1/14/05, 2/18/05 & 3/25/05. A summary compilation DVD (Title: 44 - Central Storage Container) was made from the Phase 1 of TBD-306 and 2005 disks. This compilation specifically addresses this scenario. 	
Conclusion:	Configurations A and C a was identified for Physica CSC could be remnants fragments were consolid Fragment Container (Fu 288 and on video (DVD 7/26/04, 7/27/04, 7/30/0 8/26/04, 8/27/04, 8/31/04	or A-49 fuel rod segments were not located within the CSC for Physical as defined by the scenario. However, SNM in the form of fuel fragments al Configurations B and D. A number of the fuel fragments found in the of the three unaccounted for A-49 fuel rod segments. The SNM fuel dated in the Unclad Fuel Fragment Container (UFFC) and the Fuel el Frag). The SNM fuel fragments are documented in Calculation NX- s – 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, 7/13/04, 7/25/04, 4, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 8/18&19/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, 10/1/04 AM & 0/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 1/28/05, 2/2/05, 3/23/05 and 3/25/05).

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Action items:

None

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	45			·
Scenario Information	: Scenario No:	1-04-03w		• • • •
	Title/Location:	Containers		
	Objective/Description:	Pellet Catcher		
	Physical Configuration:	: A, B, C, & D	· .	
Inspection Summary/	 adequately documen inconclusive, re-exan underwater video equ Details: Re-reviewed the DVI inspection of the defin Re-reviewed DVDs to "as-is" condition and Final video documen was made during 200 Combination of the padequate to assess the A HBPP Area Surve No. 5-081) on 2/16/09 The results of the su dose level was 316R DVDs generated du 8/16/04. DVDs generated in 2 A summary compilati 	Ds to determine if the disks adequately ned scenario areas. o fully assess the content of the Pellet content for the subject container on the tation of subject Pellet Catcher content 04/2005 (DVDs) and is addressed in sce previous existing video and the recent he subject scenario. by Report was generated for the Pellet 5, ubject Area Survey Report indicate that /hr before and 1.3R/hr after the Pellet Catcher content for the Pellet Catcher content of the Pellet Catcher content /hr before and 1.3R/hr after the Pellet Catcher content of the Pe	e defined areas. ations utilizing bin ion of same. y document the ex Catcher. DVDs o date that the disks and subsequent the marios 23 - 38. t video taken in 2 Catcher (SWP #5 t the highest mean atcher was empties ed 10/22/03, 7/29 7/05 AM & PM.	If the review is oculars and/or camination and nly provide the swere made. ransfer to ISCs 2004/2005 was 5-0102, Survey sured radiation d. 2004, 8/5/04, & hase 1 of TBD-
	Physical Configurations	or A-49 fuel rod segments were not loo A, B, C, & D as defined by the scer her SNM was not present due to the l	nario. The Area	Survey Report
Action Items:	an an an Air an ann an Air an Air An an Air an A	umas palaula Amas palaula Umas palaula Umas palaula Umas palaula		in free oolf

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	46	
Scenario Information:	Scenario No:	1-04-03x
	Title/Location:	Containers
	Objective/Description:	Transitory ISCs (17 – 20)
	Physical Configuration:	A, B, C, & D
Inspection Process:	 Accordingly, they ma ISCs will be placed in Transitory ISCs may content placed in an transfer of the conten Document the examinaries and inspective content 	definition may hold items as required to support SFP activities. y or may not contain items at any given time. The content of Transitory ISCs that are specifically identified and designated. or may not be examined and/or videotaped, since they will have their ISC. The content of the Transitory ISCs will be addressed after the t to an ISC. nation and inspection of the defined areas. If the review is inconclusive, bect those areas and locations utilizing binoculars and/or underwater uding recorded documentation of same.
Inspection Summary:	7/25/04, 7/27/04, 7/2	s DVDs (Disks – 7/11/04, 7/12/04, 7/13/04, 7/17/04, 7/19/04, 7/23/04, 9/04, 8/4/04, 8/26/04, 12/10/04, 12/22/04, 12/23/04 AM & PM, 12/29/04 31/04, & 1/4/05) associated with the ISC and Transitory ISCs.
Inspection Results/De	etails:	
	 Due to the transitory and/or inspection of the subject ISC content determined that exame However, the associ containers and their of DVD recorded on 4/2 Transitory ISC 18 contempty. 	y nature of the subject ISCs, it was determined that any examination the subject ISCs would only provide an "as-is" current determination of ent, rather than the "final" content of the subject ISC. Therefore, it was nination and/or inspection of the subject ISCs would not be performed. ated DVDs were reviewed and supported the transitory nature of the contents. 20/05 documents that Transitory ISC 17 contains irradiated hardware, ntains SNM waste, Transitory ISC 19 is empty, and Transitory ISC 20 is content (if any) of subject ISCs would be documented during final
Video Records:	7/11/04, 7/12/04, 7/	ing previous examinations of the ISCs and Transitory ISCs: Disks dated 13/04, 7/17/04, 7/19/04, 7/23/04, 7/25/04, 7/27/04, 7/29/04, 8/4/04, 2/22/04, 12/23/04 AM & PM, 12/29/04 Part A, 12/30/04, 12/31/04, 1/4/05
Conclusion:	Physical Configurations A fragments was identified to a final assessment of ea	or A-49 fuel rod segments were not located within the SFP location for A, B, & C as defined by the scenario. However, SNM in the form of fuel for Physical Configuration D. Due to the transitory nature of these ISCs, inch ISC will be performed upon their removal from the SFP during the P Unit 3. At that time, any evidence of the three unaccounted for fuel

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rod segments and/or SNM will be appropriately documented. It is highly unlikely that the fuel rod segments will be found in Physical Configuration A or C. However, it is reasonably possible that fuel fragments may be found in Physical Configurations B or D. The SNM fuel fragments are documented in Calculation NX-288 and on video (DVDs – 10/22/03, 02/04, 03/04, 7/9/04, 7/11/04, 7/12/04, 7/13/04, 7/25/04, 7/26/04, 7/27/04, 7/30/04, 8/10/04, 8/11/04, 8/12/04, 8/15/04, 8/16/04, 8/17/04, 8/18&19/04, 8/26/04, 8/27/04, 8/31/04, 9/15/04, 9/17/04, 9/21/04, 9/28/04, 9/29/04 PM, 9/30/04, 10/1/04 AM & PM, 10/5/04, 10/6/04, 10/8/04, 12/10/04, 12/28/04, 1/13/05, 1/14/05, 1/26/05, 1/28/05, 2/2/05, 2/17/05, 2/18/05, 3/2/05, 3/23/05 and 3/25/05).

Action Items:

- Perform a final examination of the ISCs following their removal from the SFP.
- Document any evidence of the three unaccounted for fuel rod segments and/or SNM found during the examination.

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	47	
Scenario Information:	Scenario No:	1-04-04a
	Title/Location:	Miscellaneous
	Objective/Description:	Poison Curtain Rack 1 & Under Rack
	Physical Configuration:	A, B, C, & D
Inspection Process:	 Visually assess with binoculars and underwater video equipment. Video document the exterior of the rack. 	
Inspection Summary/I	 Details: Reviewed the various DVDs (Disks 10/8/03, 10/16/03, 10/22/03, 8/7/04 PM, & 12/22/04) associated with the subject rack that were previously generated. It was not necessary to examine the inside of the Poison Curtain Rack 1 because the rack was not fabricated and installed in the SFP until 2003. Only poison curtains have been installed in the rack. 	
Inspection Results:	 No additional examination or video documentation was performed. Combination of the existing DVDs, dates associated with the fabrication and placement of the rack in the SFP, and the documentation for the loading of the rack with poison curtains is adequate to assess the subject scenario. 	
Video Records:	DVDs concrated dur	ing previous examinations of the rack: Disks dated 10/8/03 10/16/03
Conclusion:	 DVDs generated during previous examinations of the rack: Disks dated 10/8/ 10/22/03, 8/7/04 PM, & 12/22/04. 	
	The three unaccounted for A-49 fuel rod segments and/or SNM were not located within the SFI location for Physical Configurations A, B, C, & D as defined by the scenario.	
Action Items:		
	None	

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	48		$C_{\rm eff} = 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1$
Scenario Information:	Scenario No:	1-04-04b	the the second of the second
	Title/Location:	Miscellaneous	
the second second	Objective/Description:	Poison Curtain Rack 2 & Un	der Rack
	Physical Configuration:	A, B, C, & D,	en der after after an
Inspection Summary/ Inspection Results: Video Records: Conclusion: Action Items:	 Videotape the exterio Details: Reviewed the variou associated with the stand the second second with the stand second with the stand the second second	ubject rack that were previous to examine the inside of the id installed in the SFP until 20 have been installed in the rack nation or video documentati associated with the fabrication on for the loading of the rack for the loading of the rack	 16/03, 10/22/03", 8/7/04 PM, & 12/22/04) ly generated. Poison Curtain Rack 2 because the rack 03. k. on was performed. Combination of the on and placement of the rack in the SFP, with poison curtains is adequate to assess the rack: Disks dated 10/8/03, 10/16/03, d/or SNM were not located within the SFP ined by the scenario.

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	49	
Scenario Information:	Scenario No:	1-04-04c
	Title/Location:	Miscellaneous
	Objective/Description:	Work/Inspection Platform (On, Underneath & Behind) – South Wall
	Physical Configuration:	A, B, C, & D
Inspection Process:	 Re-review the DVDs (Disks -1/8/05 & 1/27/05 PM) and determine if the tape adequately documents the examination and inspection of the defined areas. If the review is inconclusive, re-examine and inspect those areas and locations utilizing binoculars and/or underwater video equipment, including recorded documentation of same. Visually assess with binoculars and underwater video equipment. Videotape the exterior of the rack (if necessary). 	
Inspection Summary/	Re-reviewed the DVI inspection of the defin	Ds to determine if the disks adequately document the examination and ned scenario areas. Platform was not fabricated and installed in the SFP until August 2004.
Inspection Results:	 Performed additional "as-is" condition in the Combination of the ex 	o fully assess the Work/Inspection Platform. video documentation of the Work/Inspection Platform to document the
Video Records:	 DVDs generated duri 1/8/05 & 1/27/05 PM. 	ing previous examinations of the Work/Inspection Platform: Disks dated
Conclusion:		or A-49 fuel rod segments and/or SNM were not located within the SFP figurations A, B, C, & D as defined by the scenario.
Action Items:	• None	

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	50		· · · · · · · · · · · · · · · · · · ·
Scenario Information:	Scenario No:	1-04-04d	
	Title/Location:	Miscellaneous	
	Objective/Description:	Work/Inspection Platform (On,	Underneath & Behind) – East Wall
	Physical Configuration:	A, B, C, & D	
Inspection Process:	 the disks adequately review is inconclusive and/or underwater vic Visually assess with the second secon	document the examination and	equipment.
Inspection Summary/I			equately document the examination and
Inspection Results:	 Performed additional "as-is" condition in the Combination of the adequate to assess t 	e subject area. existing video and recent We	ork/Inspection Platform to document the ork/Inspection Platform video was not d access limitations to the bottom of the
Video Records:	 8/2/04, 1/8/05, 1/18/0 A summary compilation 	5, & 1/27/05 AM & PM.	e Work/Inspection Platform: Disks dated Platform East Wall) was made from the loped to address the scenario.
Conclusion:	location for Physical Co examinations documente area of the Work/Inspect examine the subject area fuel from the SFP and its the SFP during the deco unaccounted for fuel rod unlikely that the fuel rod	nfigurations A, B, C, & D as d on video tape. Due to the o stion Platform, it is extremely with currently available equipment storage in the HBPP ISFSI, the mmissioning of HBPP Unit 3. segments and/or SNM will be	or SNM were not located within the SFP defined by the scenario based on the debris and limited access to the bottom difficult if not impossible to adequately ent. Therefore, after removal of all spent e subject structure will be removed from At that time, any evidence of the three appropriately documented. It is highly ical Configuration A or C. However, it is Physical Configurations B or D.

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Action Items:

- Perform a final examination of the platform as it is removed and the area following removal of the platform.
- Document any evidence of the three unaccounted for fuel rod segments and/or SNM found during the examination.

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	51 [°]		· · ·	
Scenario Information:		1-04-04e		
	Title/Location:	Miscellaneous	1	1999 - E. B.
n	Objective/Description:	Energy Absorber (Underneath, Top)	Between – West & S	South Walls & On
	Dhysical Configuration			

Physical Configuration: A, B, C, & D

Inspection Process:

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- Re-review the DVDs (Disks 10/22/03, 7/9/04, 7/25/04, 7/27/04, 7/28/04, 7/29/04, 8/2/04, 8/17/04, 8/18/04, 8/19/04, 8/26/04, 9/2/04, 9/8/04, & 9/21/04) and determine if the disks adequately document the examination and inspection of the defined areas. If the review is inconclusive, re-examine and inspect those areas and locations utilizing binoculars and/or underwater video equipment, including recorded documentation of same.
- Either obtain the required underwater video equipment to examine the subject areas that were not previously inspected, or move the absorber so that the currently available equipment can be utilized to examine the subject areas that were not previously inspected.

Inspection Summary/Details:

• Re-reviewed the DVDs to determine if the disks adequately document the examination and inspection of the defined scenario areas.

Inspection Results:

- The existing DVDs did not fully assess the Energy Absorber scenario.
- Performed additional video documentation of the Energy Absorber to document the "as-is" condition in the subject area. Most of the area underneath the energy absorber was searched providing reasonable assurance that the objects (A, B, C, & D) are not there. A small portion of the absorber could not be viewed due to clutter and debris that was not readily removable. Most but not all of the areas between the walls (south and west) and the absorber were searched providing some reasonable assurance that the objects (A, B, C, & D) are not there. A not there. Some of the area between the south and west walls, and the absorber could not be viewed due to limited access.
- Additional examination and video documentation was performed on 12/31/04, 1/5/05, 1/18/05, & 1/19/05. Combination of the previous existing video and the recent video taken in late 2004 and early 2005 was not adequate to assess the subject scenario.

Video Records:

- DVDs generated during Phase 1 of TBD-306: Disks dated 10/22/03, 7/9/04, 7/25/04, 7/27/04, 7/28/04, 7/29/04, 8/2/04, 8/17/04, 8/18/04, 8/19/04, 8/26/04, 9/2/04, 9/8/04, & 9/21/04.
- DVDs generated in late 2004 and early 2005: Disks dated 12/31/04, 1/5/05, 1/18/05 & 1/19/05.

Conclusion:

The three unaccounted for A-49 fuel rod segments and/or SNM were not located within the SFP location for Physical Configurations A, B, C, & D as defined by the scenario based on the examinations documented on video tape. Due to the limited access along the south and west walls of the SFP in the vicinity of the Energy Absorber, it is extremely difficult if not impossible to adequately examine the subject area with currently available equipment. Therefore, after

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removal of all spent fuel from the SFP and its storage in the HBPP ISFSI, the subject structure will be removed from the SFP during the decommissioning of HBPP Unit 3. At that time, any evidence of the three unaccounted for fuel rod segments and/or SNM will be appropriately documented. It is highly unlikely that the fuel rod segments will be found in Physical Configuration A or C. However, it is reasonably possible that fuel fragments may be found in Physical Configurations B or D.

Action Items:

- Perform a final examination of the Energy Absorber as it is removed and the area following removal of the Energy Absorber.
- Document any evidence of the three unaccounted for fuel rod segments and/or SNM found during the examination.

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	52		
Scenario Information:		1-04-04f	
	Title/Location:	Miscellaneous	
	Objective/Description:	Channels (On, Between, Underneath & In)	
	Physical Configuration:	A, B, C, & D	
Inspection Process:		pinoculars and underwater video equipment. r of the stacked channels.	
Inspection Summary/D	Details:		
	• Reviewed the various	s DVDs (Disks 7/25/04, 7/27/04, & 8/2/04) associated with th reviously generated.	e subject
	 channels that were previously generated. The channels were removed from the fuel assemblies and placed in their current position an configuration in the SFP in 2000 during the fuel assembly inspection. The channels ar currently stacked in the Cask Pit area of the SFP 		
	 The top of the channel It was not necessary (A, B, C, & D) would be 2000. HBPP believe beneath the channels prior to the placeme looking for fuel segre 	el stack does not indicate the presence of the objects (A, B, C, & to examine between, underneath, and in the channels since th nave been located and identified during the placement of the ch ed that there was a low probability that the fuel rod segme s, since the SFP floor area appeared to be clean in 2000 im nt of the channels. However, HBPP personnel were not sp ments and/or fuel fragments at that time, so it is possible ts may beneath the channels.	ne objects nannels in ents were mediately pecifically
Inspection Results:			
	 Performed additional in the subject area. provided reasonable a Additional examination 1/20/05. Combination 	d not fully assess the Channels. video documentation of the Channels to document the "as-is" Most of the areas associated with the channels were search assurance that the objects (A, B, C, & D) are not there. on and video documentation was performed on 12/22/04, 12 n of the previous existing video and the recent video taken in dequate to assess the subject scenario.	ched and /31/04, &
Video Records:			
		ng Phase 1 of TBD-306: Disks dated 7/25/04, 7/27/04, & 8/2/04 te 2004 and early 2005: Disks dated 12/22/04, 12/31/04, & 1/20	
Conclusion:			
	location for Physical Conf of the Channels, the area this time. Therefore, af examined, and at that tim SNM will be appropriatel	or A-49 fuel rod segments and/or SNM were not located within figurations A, B, C, & D as defined by the scenario. Due to the a of the SFP immediately beneath the Channels cannot be exa- ter removal of the Channels from the SFP, the subject are ne, any evidence of the three unaccounted for fuel rod segmen y documented. It is highly unlikely that the fuel rod segmen uration A or C. However, it is reasonably possible that fuel f Configurations B or D.	presence amined at a will be nts and/or nts will be

Attachment 2

Action Items:

- Perform a final examination of the channels as they are removed and the SFP floor area following removal of the channels.
- Document any evidence of the three unaccounted for fuel rod segments and/or SNM found during the examination.

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Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	53		¹
Scenario Information:	Scenario No:	1-04-04g	; · . ·
	Title/Location:	Miscellaneous	
:	Objective/Description:	Dummy Fuel Assembly	
	Physical Configuration:	A, B, C, & D	
	 examination and insp and inspect those equipment, including in Lift dummy fuel asset hiding places. 	(Disk – 8/4/04) to determine if the disk adequate bection of the defined areas. If the review is inconc areas and locations utilizing binoculars and/or recorded documentation of same. mbly and examine in either empty cell or Channel St	lusive, re-examine underwater video
Inspection Summary/I	 Details: Re-reviewed the DVE inspection of the definition 	D to determine if the disk adequately documents the ned scenario area.	e examination and
1 ; <i>1</i>	 The dummy assembly assembly component assembly. The dumm assembly and it cannot assembly and it cannot reviewed DVD to a The dummy assembly. The subject tape of t & D) were not there. No additional examination Assembly video was a sembly vide	y has characteristics of a real fuel assembly. It is f ts and filled with lead shot to simulate the weight ny assembly is bolted shut and there is no access to	of an actual fuel o the interior of the e objects (A, B, C,
Conclusion:		or A-49 fuel rod segments and/or SNM were not loca igurations A, B, C, & D as defined by the scenario.	ted within the SFP
Action Items:			

• Examine the Dummy Fuel Assembly cell after it is removed from the SFP.

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Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	54	
Scenario Information:	Scenario No:	1-04-04h
	Title/Location:	Miscellaneous
	Objective/Description:	Channel Stripper (On, Behind, Underneath & In)
	Physical Configuration:	A, B, C, & D
Inspection Process:	document the examin re-examine and insp	(Disks 8/13/03, 8/18/04 & 8/19/04) and determine if the disks adequately ation and inspection of the defined areas. If the review is inconclusive, ect those areas and locations utilizing binoculars and/or underwater uding recorded documentation of same.
Inspection Summary/		
	 Re-reviewed the DVI inspection of the definition 	Ds to determine if the disks adequately document the examination and ned scenario areas.
Inspection Results:	 Performed additional condition in the subjet Additional examination Part 2, 1/12/05 Parts 	AM & PM, 1/17/05 Parts 1 & 2, 1/18/05, 1/19/05, 1/20/05, & 1/27/05. previous existing video and the recent video taken in early 2005 was
Video Records:	 DVDs generated in 20 1/17/05 Parts 1 & 2, 1 A summary compilati 	ng Phase 1 of TBD-306: Disks 8/13/03, 8/18/04, & 8/19/04. 005: Disks dated 1/5/05, 1/8/05, 1/11/05 Part 2, 1/12/05 Parts AM & PM, /18/05, 1/19/05, 1/20/05, & 1/27/05. on DVD (Title: 54 – Channel Stripper) was made from the Phase 1 of disks. This compilation was specifically developed to address this
Conclusion:		or A-49 fuel rod segments and/or SNM were not located within the SFP igurations A, B, C, & D as defined by the scenario.
Action Items:	• None	

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Attachment 2

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SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	55		
Scenario Information:	Scenario No:	1-04-04i	en en de la construction de la
	Title/Location:	Miscellaneous	·
	Objective/Description:	Resin Bed (On, Behind, Undernea	th & In)
	Physical Configuration:	A, B, C, & D	
Inspection Summary/I	 Search the entire resi Remove and/or clear segments and/or SNM Details: The accessible areas dated 02/04 (TP2004 provided reasonable areas of the resin I interferences. Re-reviewed DVDs to the bed. Performed additional to remove it. 	A is not present. s of the resin bed were previousl Disks $1 - 7$), 7/28/04, 8/1/04, & 8/2 assurance that the objects (A, B, C bed were not searched at that t bed were not searched at that t o fully assess the Resin Bed and a video documentation of the Resin B	the three unaccounted for fuel rod ly searched (documented on DVDs 2/04) and probed utilizing a rake, and 2, & D) were not there. However, all ime due to access limitations and ny items that might be hidden within
	 fragments (< ¼[*]) that the resin in the separation Additional examination 2, 1/11/05 Parts 1 & 2 	t were picked up during the vacuu ator. There was no evidence of sma on and video documentation was pe 2, 1/14/05, 1/17/05, 1/18/05 1/20/05	m process would be separated from
	the subject scenario.	n De NSMe Britskeppelsen en en et en de s	
· · .	 DVDs generated duri 7/28/04, 8/1/04, & 8/2 DVDs generated in 2 1/14/05, 1/17/05, 1/18 	2/04. 2005: Disks dated 1/9/05, 1/10/05 3/05 1/20/05, 1/21/05, & 1/22/05.	ted 02/04 (TP2004-01 Disks 1 – 7), Parts 1 & 2, 1/11/05 Parts 1 & 2,
	The three unaccounted for location for Physical Conf	igurations A, B, C, & D as defined b	NM were not located within the SFP by the scenario.
	• None		

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Attachment 2

SPENT FUEL POOL PHYSICAL INSPECTION RESULTS

Area/Item No.:	56	
Scenario Information:	Scenario No:	1-04-04j
	Title/Location:	Miscellaneous
	Objective/Description:	Operating Sources (North End of SFP)
	Physical Configuration:	A, B, C, & D
Inspection Process:	 the disks adequately review is inconclusive and/or underwater vid Visually assess with b 	(Disks 10/22/03, 7/27/04, 7/29/04, 8/18/04, & 8/19/04) and determine if document the examination and inspection of the defined areas. If the e, re-examine and inspect those areas and locations utilizing binoculars eo equipment, including recorded documentation of same. inoculars and underwater video equipment.
Inspection Summary/		
	inspection of the definVisually examined the	
Inspection Results:	 Performed additional corner of the SFP follo Additional examination 	fully assess the Operating Sources. video documentation of the Operating Sources and the northwest owing resin vacuuming to document the "as-is" condition of the area. n and video documentation was performed on 1/27/05. Combination of video and the recent video taken in early 2005 was adequate to assess
Video Records:	8/19/0.DVD generated in 200A summary compilation	ng Phase 1 of TBD-306: Disks 10/22/03, 7/27/04, 7/29/04, 8/18/04, & D5: Disk dated 1/27/05. On DVD (Title: 56 – Operating Sources) was made from the Phase 1 of disks. This compilation was specifically developed to address this
Conclusion:	location for Physical Con Sources could not be lift handle was broken and th in the fuel rack cell and interest was noted. The varying depths that was p	or A-49 fuel rod segments and/or SNM were not located within the SFP figurations A, B, C & D as defined by the scenario. The Operating ed since the integrity of the source handles were in question. One e other handle was suspect. The area immediately around the sources the floor surrounding the sources was checked for SNM. Nothing of floor in the immediate area was covered with a residue of resin of robed for SNM. Since the sources were not lifted, only the "nose" area e sources that seat in the fuel rack cells was not inspected.

Attachment 2

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Action Items:

• Examine the Operating Sources fuel rack cell area after they are removed from the SFP.

ENGINEERING REVIEW OF CONTROL AND ACCOUNTABILITY OF MODIFIED FUEL ASSEMBLIES AT HUMBOLDT BAY POWER PLANT UNIT 3 FINAL REPORT

BY HBPP SNM PROJECT

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ENGINEERING REVIEW OF CONTROL AND ACCOUNTABILITY OF MODIFIED FUEL ASSEMBLIES AT HUMBOLDT BAY POWER PLANT UNIT 3

PURPOSE AND BACKGROUND

HBPP has 389 fuel assemblies encased in Boral Cans and one damaged_assembly (UD-6N) in a stainless steel container in the Unit 3 spent fuel pool (SFP). Investigation by HBPP and the SNM Project has determined that 28 of the 389 assemblies were subject to some form of modification/alteration. This document will examine the history of these assemblies.

For purposes of this report, a modified fuel assembly is any assembly that is not in its original, as received configuration. Modified fuel assemblies typically include assemblies that have been encased in stainless steel to maintain assembly structural stability due to sheared top end plate studs, assemblies subjected to failed trepanning efforts, assemblies that have had some of their fuel rods removed for shipment offsite or to accommodate installation of test rods, assemblies subject to reconstitution activities, and assemblies damaged by modification efforts (missing upper/lower end plugs, fuel rod unscrewed from tie plate, etc.).

RESULTS

The HBPP and SNM Project investigations have concluded that 28 of the HBPP fuel assemblies have been modified. Thus, the 390 assemblies in residence in the HBPP Unit 3 SFP may be categorized as follows:

- 361 assemblies are unmodified. These assemblies will not be examined as part of this evaluation, as the bundles remain in their original configuration and their history is readily determined by core loading maps and SFP maps.
- 28 assemblies that have been modified. These assemblies are the focus of this report.
- Assembly UD-6N was damaged during a fuel move. The UD-6N assembly lost its physical integrity and has been stored in a special storage container. UD-6N is not evaluated as part of this report.

HBPP Fuel Condition Reports are herein provided for the 28 modified assemblies. The Condition Reports list documentation associated with assembly receipt and storage as new/unirradiated fuel, core loading positions during the assembly's nuclear service, irradiated storage locations in the SFP, modification/reconstitution activities, review of assembly inspection records, and an assembly status summary. As an accompaniment to the Condition Report, a Modified Assembly Map is provided that includes a matrix (reflecting the top view of the assembly) that shows any missing or removed rods, missing end plugs, and other notations related to modification of the assembly. Note that 5 of the 28 modified assemblies do not include this Modified Assembly Map, as the

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5 assemblies were successfully reconstituted and subsequently burned for at least one cycle of operation. Thus, Modified Assembly Maps for the five assemblies would simply reflect their full complement of fuel rods and would offer no additional information to the Fuel Condition Report. The five such assemblies are - HE-01, HE-04, HE-24, HD-07 and HD-16.

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FUEL CONDITION REPORT

Assembly

B-14

Receipt & New Fuel (Unirradiated) Storage

Received on 6/2/65 (RLOC 03612-1833 to 1838 – B-14 info found on 03612-1836) New Fuel Storage Vault Space 1N 6/2/65 – 9/14/66 RLOC 03612-1096 to 1073.

Active Nuclear Service and Discharge

Cycle 3A	Core Location 56-02	12/20/66-3/29/67	RLOC 03612-1426
Cycle 3B	Core Location 56-02	4/5/67-10/4/67	RLOC 03612-1425
Cycle 4A	Core Location 54-12	10/28/67-10/5/68	RLOC 03612-1424
Cycle 4B	Core Location 55-12	10/25/68-6/14/69	RLOC 03612-1423
Cycle 5	Core Location 55-12	7/20/69-4/17/70	RLOC 03612-1422
Cycle 6	Core Location 54-14	5/9/70-6/5/71	RLOC 03612-1421

Discharged 6/20/71

Irradiated Storage

SFP Location 69-03, 9/21/71, RLOC 03612-1212.

Bundle remained in this SFP location through SFP survey map dated 5/5/72, RLOC 03612-1179.

SFP Location 65-07, 5/6/72, RLOC 03612-1178.

Bundle remained in this SFP location through SFP survey map dated 10/27/72, RLOC 03612-1170.

SFP Location 71-01, 2/16/73, RLOC 03612-1169.

Bundle remained in this SFP location through SFP survey map dated 8/3/83, RLOC 03612-1145.

SFP Location 17, 2/23/84, RLOC 03633-2897.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 22, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

The only activities related to B-14 occurred during the GE visit of November 1972. The following are the notes from these activities (Reference RLOC 03614-4156 through 4161):

FUEL CONDITION REPORT

"B-14 was installed into the elevator with intentions of breaking off the upper end plate studs at the base of the nut should the tie nut be frozen on the upper end plate. The nuts were frozen on the stud and were broken off as planned, except for rods C-7 & G-3. The nut on rod C-7 would come off and was backed off. However, the nut on rod G-3 would not back off nor would its stud break off. The rod is not secured to the lower tie plate as it rotates quite freely in the bundle. Therefore there is no tie rods holding the upper tie plate to the bundle. Several unsuccessful attempts were made to remove the upper tie plate from the bundle. After about 10 hours trying to remove the tie plate from the bundle it was decided to abort the rod retrieval from bundles B-14 and C-85."

"Plans are being made to restore bundle B-14 to its original handleable state."

Ultimately, the fuel bundle was bound by steel cable to restore the assembly to a condition where the assembly may be moved.

Status Summary

SNM:

B-14 has all of its original fuel rods - no changes to the assembly SNM quantities.

Modification:

The assembly has six upper tie rod nuts that are sheared off, and one tie rod not secured to lower tie plate.

The assembly has an added cable for preservation of the assembly integrity and to allow B-14 to be handled/moved.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 27.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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Assembly: B-14

MODIFIED ASSEMBLY MAP

Assembly: B-14

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i⊊:	A	Billionstation		Distance	E	Friederat	GESSIN
SUMPLY A			Tie rod upper end plate nut sheared off.				
2							
3	Tie rod upper end plate nut sheared off.						Tie rod not secured to lower tie plate.
A STATISTICS							
5	Tie rod upper end plate nut sheared off.						Tie rod upper end plate nut sheared off.
6.5.4.4							
	-				Tie rod upper end plate nut sheared off.		

Handling Notes: SPECIAL HANDLING REQUIRED. HELD TOGETHER BY STEEL CABLE Burnup (Reference Record Location): 15795.50 (RLOC 05775-2966 through 3254) Date (Reference Record Location) of Fuel Receipt: 6/2/65 (RLOC 03612-1833) Fuel Type: GE Type II P1

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FUEL CONDITION REPORT

Assembly

B-29

Receipt & New Fuel (Unirradiated) Storage

Received on 6/2/65 (RLOC 03612-1833 to 1838 – B-29 info found on 03612-1835) New Fuel Storage Vault Space 2K 6/2/65 – 8/8/66 RLOC 03612-1096 to 1077.

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Active Nuclear Service and Discharge

Cycle 3A	Core Location 61-04	12/20/66-3/29/67		RLOC 03612-1426
Cycle 3B	Core Location 61-04	4/5/67-10/4/67		RLOC 03612-1425
Cycle 4A	Core Location 62-04	10/28/67-10/5/68		RLOC 03612-1424
Cycle 4B	Core Location 61-04	10/25/68-6/14/69	· · · ·	RLOC 03612-1423
Cycle 5	Core Location 61-04	7/20/69-4/17/70		RLOC 03612-1422
Cycle 6	Core Location 61-04	5/9/70-6/5/71		RLOC 03612-1421

Discharged 6/11/71

Irradiated Storage

SFP Location 70-06, 9/21/71, RLOC 03612-1212.

Bundle remained in this SFP location through SFP survey map dated 3/24/72, RLOC 03612-1183.

SFP Location 71-15, 5/4/72, RLOC 03612-1180.

Bundle remained in this SFP location through SFP survey map dated 2/16/73, RLOC 03612-1169.

Bundle moved from SFP Location 71-15 to SFP Location 55-01. (RLOC 03614-4126) Bundle moved from SFP Location 55-01 to channel stripper. (RLOC 03614-4126) Bundle moved from channel stripper to SFP Location 53-07. (RLOC 03614-4126) SFP Location 53-07, 4/26/73, RLOC 03612-1167.

Assembly top plate map showing the six rods removed on 4/28/73. RLOC 03612-1168 Bundle remained in SFP location 53-07 through SFP survey map dated 11/13/73, RLOC 03612-1164.

SFP Location 53-13, 'Following 1/11/74 fuel movement', RLOC 03612-1163. Bundle remained in this SFP location through SFP survey map dated 7/30/86. RLOC 03633-2938.

SFP Location 53-12, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

FUEL CONDITION REPORT

Reconstitution/Modification Activities

The only activities related to B-29 occurred during the GE visit of April 1973. The following are the notes from these activities (Reference RLOC 03614-4113 through 4131):

A discussion of B-29 begins on RLOC 03614-4117 and describes the trepanning method to be used to extract fuel rods from Type II fuel.

On RLOC 03614-4119: "Six rods have been removed using the above described method...."

RLOC 03614-4124 and 4125 show a map of assembly B-29, indicating the serial numbers and location of the six removed rods, and their shipping can number and shipment number. The rods that were removed are B-2, D-2, B-4, F-4, D-6, & F-6.

Status Summary

SNM: B-29 has had six fuel rods removed.

Modification: The upper tie plate for B-29 has been subject to trepanning.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 06.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

MODIFIED ASSEMBLY MAP

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Assembly: B-29

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2:		Rod		Rod			
		Removed.		Removed.			
2		·					
1-							
3;						· · · · · · · · · · · · · · · · · · ·	
			i				
·A:		Rod				Rod	
		Removed.				Removed.	
5							
6				Rod Removed.		Rod Removed.	
				Removed.	· ,	Removed.	
5	• 1						
	,						

Handling Notes: UPPER TIE PLATE HAS BEEN SUBJECTED TO TREPANNING. Burnup (Reference Record Location): 19087.03 (RLOC 05775-2966 through 3254) Date (Reference Record Location) of Fuel Receipt: 6/2/65 (RLOC 03612-1833) Fuel Type: GE Type II P1 Assembly: B-29

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MODIFIED ASSEMBLY MAP

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FUEL CONDITION REPORT

Assembly

C-85

Receipt & New Fuel (Unirradiated) Storage

Reference RLOC 03612-2065 to 2071. C-85 SNM info found on 03612-2069. Shipping date of 8/31/67, receipt stamp for HBPP dated 9/4/67 on frame 2071. New Fuel Storage Vault Space 2C 9/8/67 – 9/18/67 RLOC 03612-1068 & 1067.

and the Active Nuclear Service and Discharge

Cycle 4A	Core Location 54-08	10/28/67-10/5/68	RLOC 03612-1424
Cycle 4B	Core Location 61-09	10/25/68-6/14/69	RLOC 03612-1423
Cycle 5	Core Location 61-09	7/20/69-4/17/70	RLOC 03612-1422
Cycle 6	Core Location 61-09	5/9/70-6/5/71	RLOC 03612-1421

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Discharged 6/15/71

Irradiated Storage

SFP Location 66-01, 9/21/71, RLOC 03612-1212.

Bundle remained in this SFP location through SFP survey map dated 5/4/72, RLOC 03612-1180.

SFP Location 67-09, 5/5/72, RLOC 03612-1179.

Bundle remained in this SFP location through SFP survey map dated 11/13/73, RLOC 03612-1164.

SFP Location 67-14, "Following 1/11/74 fuel movements", otherwise undated, RLOC 03612-1163.

Bundle remained in this SFP location through SFP survey map dated 1/9/75, RLOC 03612-1159.

SFP Location 62-07, "Final Status Before refueling 6/75", otherwise undated, RLOC 03612-1158.

SFP Location 66-07, "Final Status After refueling 7/75", otherwise undated, RLOC 03612-1157.

Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895.

SFP Location 67-07, 12/2/84, RLOC 03633-2898.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 67-06, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through SFP survey map dated 5/12/2000. SFP Location 67-14, 3/1/01 through SFP survey map dated 12/27/04.

FUEL CONDITION REPORT

Reconstitution/Modification Activities

Assembly C-85 was manipulated during the GE visit of November 1972. The following are the notes from these activities (Reference RLOC 03614-4156 through_4161):

"On November 15, bundle C-85 was moved into the elevator. The fingers on the lock tab washers were pushed down allowing access to the nuts on the tie rod upper end plate. Removal of nuts on tie rods G-5 and G-3 were first attempted and succeeded only in unscrewing the tie rods from the lower tie plate. It was decided to lower the upper tie plate by tightening the adjacent tie rod nuts in hopes of eliminating the possibility of the tie rod unscrewing from the lower tie plate. The nut on Rod A-3 was torqued in a clockwise direction, and after about 1 ft-lb of torque, the upper end plate stud snapped off at the base of the nut. The same thing was tried on rod C-7, with similar results. At that point, work was stopped and C-85 was removed from the elevator."

Rod retrieval for C-85 was aborted.

Status Summary

SNM:

No rods have been removed from C-85. The assembly retains its original complement of SNM.

Modification: Two tie rods (G-3 and G-5) have unscrewed from the lower tie plate.

Two tie rods (A-3 and C-7) have sheared upper tie plate top studs.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 19.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

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Assembly: C-85

Burnup (Reference Record Location) of Fuel Receipt: 9/4/67 (RLOC 03612 Handling Notes: Handling Notes: Rod unscrewed from lower tie plate. Rod unscrewed from lower tie plate. Rod unscrewed from lower tie plate.	Record Location) of Fuel Receipt: 9/4/67 (RLOC 03775-2966 rom lower tie plate. Rod unscrewed from lower tie plate. Rod unscrewed from lower	Image: Second Location of Fuel Record Instrument of Fuel Reco	Assembly: C-85 Fuel Type: GE Type II P2				•	
Image: Second Location Rod Unscrewed from lower tie plate. Rod Unscrewed from lower tie plate. Rod Unscrewed from lower tie plate.	Rod unscrewed from lower tie plate. Rod unscrewed from lower tie plate.	Top stud sheared off. Rod unscrewed from lower Rod unscrewed from lower Rod unscrewed from lower Rod unscrewed from lower	Date (Reference I	Record Loc	ation) of Fuel Re	:ceipt: 9/4/67 (F	RLOC 03612-2	
Rod unscrewed from lower tie plate. Rod unscrewed from lower	Rod unscrewed from lower tie plate.	Top stud Rod sheared off. Rod unscrewed from lower tie plate. tie plate. Rod unscrewed from lower tie plate.	Burnup (Referenc	e Record L	ocation): 19107.	01 (RLOC 057)	75-2966 throu	ц С
Rod unscrewed from lower tie plate.	Rod unscrewed from lower tie plate.	Top stud Rod sheared off. Rod unscrewed from lower tie plate. Rod unscrewed from lower tie plate. Rod unscrewed from lower unscrewed from lower unscrewed from lower	Handling Notes:		· · · · · · · · · · · · · · · · · · ·		. ' 	
Rod unscrewed from lower tie plate. Rod unscrewed from lower	Rod unscrewed from lower tie plate. Rod unscrewed from lower	Top stud Rod sheared off. Rod unscrewed from lower tie plate. Rod unscrewed from lower tie plate. Rod unscrewed from lower unscrewed from lower unscrewed from lower						· .
		Top stud Image: Image Image: Image			unscrewed	::	unscrewed from lower	
		Top stud sheared off.						· 、
		Top stud sheared off.						
		Top stud sheared off.	<u>499 (64) (64) (64) (64) (64) (64) (64) (64)</u>			· · · ·		
		Top stud sheared off.		·			· · · ·	••
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tud ed off.	tud red off.		· · · · ·	به د انها د	shear	2 2 4 2 4 1 2 4 1 2 4 1 2 4 2 4 2 4 2 4 2 4 2 4 2 4 2 4 2 4 2 4	· · ·	· · ·

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FUEL CONDITION REPORT

Assembly

C-87

Receipt & New Fuel (Unirradiated) Storage

Reference RLOC 03612-2065 to 2071. C-87 SNM info found on 03612-2069. Shipping date of 8/31/67, receipt stamp for HBPP dated 9/4/67 on 03612-2071. New Fuel Storage Vault Space 3Q 9/8/67 – 9/18/67 RLOC 03612-1068 & 1067.

Active Nuclear Service and Discharge

Cycle 4A	Core Location 53-09	10/28/67-10/5/68	RLOC 03612-1424
Cycle 4B	Core Location 53-09	10/25/68-6/14/69	RLOC 03612-1423
Cycle 5	Core Location 52-06	7/20/69-4/17/70	RLOC 03612-1422
Cycle 6	Core Location 52-06	5/9/70-6/5/71	RLOC 03612-1421
Cycle 7	Core Location 51-10	8/26/71-8/25/72	RLOC 03612-1420
Cycle 8	Core Location 61-01	10/6/72-9/1/73	RLOC 03612-1419

Discharged 9/12/73.

Irradiated Storage

SFP Location 59-01, 11/13/73, RLOC 03612-1164.

Bundle was moved to channel stripper, 2 of its rods were removed, and the bundle returned to SFP 59-01, 6/20/74, RLOC 03614-4109 & 4110.

Bundle remained in this SFP location through SFP survey map dated 1/9/75, RLOC 03612-1159.

SFP Location 67-01, "Final Status Before refueling 6/75", otherwise undated, RLOC 03612-1158.

Bundle remained in this SFP location through SFP survey map dated 8/3/83, RLOC 03612-1145.

SFP Location 25, 2/23/84, RLOC 03633-2897.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 30, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

The only activities related to C-87 occurred during the GE visit of June 1974. Reference RLOC 03614-4098 through 4105. The procedure used for the rod recovery effort of June 1974 is found on RLOC 03614-4109 through 4111.

FUEL CONDITION REPORT

The following are the notes from these activities that are relevant to C-87 (RLOC 03614-4104):

"Bundle C-87 fuel rods D-2 (GK3240) and F-6 (GK 3249) removed from bundle by trepanning method and placed in shipping can #1."

e the approximate

The procedure for fuel movement for GE rod recovery, June 1974 states that the D-2 and F-6 rods were removed and the assembly was returned to SFP location 59-01. (RLOC 03614-4109 & 4110.)

Status Summary

SNM:

C-87 has had two of its fuel rods removed and shipped offsite.

Modification:

The upper tie plate has been subjected to trepanning.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 26.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

Assembly: C-87

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Assembly: C-87 Fuel Type: GE Type II P2

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FUEL CONDITION REPORT

Assembly

HD-41

Receipt & New Fuel (Unirradiated) Storage

Received on 12/23/68 (RLOC 03612-2129 to 2156 – HD-41 info found on 03612-2134) New Fuel Storage Vault Space 2M 12/31/68 RLOC 03612-1061.

Active Nuclear Service and Discharge

		بالمراجعة والعراج والمراجع		
Cycle 5	Core Location 58-06	7/20/69-4/17/70	•	RLOC 03612-1422
Cycle 6	Core Location 58-06	5/9/70-6/5/71	÷	RLOC 03612-1421

Discharged 6/13/71.

Irradiated Storage

1 . 5 . SFP Location 62-08, 9/21/71, RLOC 03612-1212.

Bundle remained in this SFP location through SFP survey map dated 2/29/72, RLOC 03612-1205.

Bundle shown in the channel stripper on SFP survey may dated 3/1/72, RLOC 03612-1204.

SFP Location 61-03, 3/2/72, RLOC 03612-1202.

Bundle remained in this SFP location through SFP survey map dated 3/22/72, RLOC 03612-1186.

SFP Location 63-01, 3/23/72, RLOC 03612-1184.

Bundle remained in this SFP location through SFP survey map dated 3/24/72, RLOC 03612-1183. and the second second

SFP Location 56-15, 5/4/72, RLOC 03612-1180.

Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895.

SFP Location 56-14, 12/2/84, RLOC 03633-2898.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 56-13, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

HD-41 was inspected during the period 2/22 to 3/10/72. RLOC 03615-1299; 03615-1302 & 1303. The inspection notes that two rods (B-5 and D-2) have no lower end plug and one rod (D-3) has its upper end plug broken off and laying on top of the bundle (RLOC 03614-4302 to 4305). • • .

FUEL CONDITION REPORT

Assembly was subject to reconstitution activities during the period 3/20-3/23/72. RLOC 03615-1297-1312.

A map of the final status of reconstituted assemblies is provided on RLOC 03612-1181 & 1182. The following rods are not original to assembly HD-41: A-4, C-1, & D-4.

The reconstitution procedure used for this work is documented in RLOC 03614-4242 to 4250.

Rod recovery efforts during June 1974 included removal of four rods from HD-41 for subsequent shipment offsite. Reference RLOC 03614-4098 to 4111. The following text appears in the report (RLOC 03614-4103):

"Bundle HD-41 completed. Four rods removed. Rods B-1 and E-4 placed in shipping can #1. Rods D-5 and E-3 placed in shipping can #3."

The procedure used for the rod removal is found on RLOC 03614-4109-4111. The procedure indicates that four rods – D-5, E-3, B-1, and E-4 were removed on 6/19/74.

Status Summary

SNM:

March 1972 work involving the reconstitution of HD-41 by replacement of three rods with rods from assembly HD-7 resulted in a net reduction of 29 grams U for HD-41 (RLOC 03614-4323).

The four rods removed from HD-41 during June 1974 had a curie content total of 2712 curies (RLOC 03614-4100 & 4101).

Modification:

Rods A-4, C-1, and D-4 are non-original rods that were placed in HD-41 from HD-7. Note that HD-7 was being reconstituted, thus, it is reasonable to conclude that the three rods are not sound rods.

Four rods have been removed. B-1, E-4, D-5, and E-3.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 10.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

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FUEL CONDITION REPORT

Assembly

HD-42

Receipt & New Fuel (Unirradiated) Storage

Received on 12/23/68 (RLOC 03612-2129 to 2156 – HD-42 info found on 03612-2134) New Fuel Storage Vault Space 2N 12/31/68 - 4/7/69 RLOC 03612-1059 to 1061.

Active Nuclear Service and Discharge

Cycle 5	Core Location 57-09	7/20/69-4/17/70	RLOC 03612-1422
Cycle 6	Core Location 57-09	5/9/70-6/5/71	RLOC 03612-1421

Discharged 6/15/71.

Irradiated Storage

SFP Location 61-08, 9/21/71, RLOC 03612-1212.

Bundle remained in this SFP location through SFP survey map dated 3/1/72, RLOC 03612-1204.

Bundle is shown in channel stripper on SFP survey map dated 3/2/72, RLOC 03612-1202.

SFP Location 61-04, 3/4/72, RLOC 03612-1200.

Bundle remained in this SFP location through SFP survey map dated 3/22/72, RLOC 03612-1186.

SFP Location 63-02, 3/23/72, RLOC 03612-1184.

Bundle remained in this SFP location through SFP survey map dated 3/24/72, RLOC 03612-1183.

SFP Location 57-16, 5/4/72, RLOC 03612-1180.

Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895.

SFP Location 58-16, 12/2/84, RLOC 03633-2898.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 58-15, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

HD-42 was inspected during the period 2/22 to 3/10/72. RLOC 03615-1299; 03615-1303. The inspection noted rod D-4 is broken at 41" and two rods, B-3 and C-2, have no lower end plugs (RLOC 03614-4279 to 4285).

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FUEL CONDITION REPORT

During the reconstitution efforts of March 1972 (RLOC 03615-1297-1312), four rods were replaced on HD-42. HD-42 rods D-6, F-4, F-6, & A-1 were replaced with rod C-6 from assembly HD-16, rod F-3 from assembly HD-16, rod F-1 from assembly HD-7, and rod F-6 from assembly HD-7, respectively. (RLOC 03612-1181).

The reconstitution procedure used for this work is documented in RLOC 03614-4242 to 4250.

Status Summary

SNM:

The reconstitution activities performed in March 1972 resulted in a net change of -28 grams U (RLOC 03615-1312).

Modification:

Four of the fuel rods - D-6, F-4, F-6, & A-1 – are not the original assembly fuel rods. Rod D-4 is broken at 41" and two rods, B-3 and C-2, have no lower end plugs.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 13.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

Assembly: HD-42

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上の時間							Handling Notes: ROD D-4 IS BROKEN AT 41".	Burnup (Reference Record Location): 11283.12 (RLOC 05775-2966 through 3254)	Date (Reference Record Location) of Fuel Receipt: 12/23/68 (RLOC 03612- 2129)	Fuel Type: GE Type III	Assembly: HD-42
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FUEL CONDITION REPORT

Assembly

HD-43

Receipt & New Fuel (Unirradiated) Storage

Received on 12/23/68 (RLOC 03612-2129 to 2156 – HD-43 info found on 03612-2134) New Fuel Storage Vault Space 2L 12/31/68 RLOC 03612-1061.

Active Nuclear Service and Discharge

Cycle 5	Core Location 58-08	7/20/69-4/17/70	• • • •	RLOC 03612-1422
Cycle 6	Core Location 59-08	5/9/70-6/5/71	• • •	RLOC 03612-1421
Cycle 7	Core Location 59-06	8/26/71-8/25/72		RLOC 03612-1420
Cycle 8	Core Location 54-03	10/6/72-9/1/73		RLOC 03612-1419

Discharged 9/12/73.

Irradiated Storage

SFP Location 58-05, 11/13/73, RLOC 03612-1164. Bundle remained in this SFP location through SFP survey map dated 7/9/74, RLOC 03612-1162. SFP Location 54-01, 8/15/74, RLOC 03612-1161. SFP Location 57-11, 9/27/74, RLOC 03612-1160. Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938. SFP Location 57-10, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

Seven rods (E-4, D-5, E-5, B-2, B-3, C-2, & B-1) were removed from the assembly during GE Rod Recovery actions during August 1974. Reference RLOC 03614-4089 to 4095.

The specific procedure step for the HD-43 rod removal is found on RLOC 03614-4090.

Isotopic information for the seven removed rods is found on RLOC 03614-4093 & 4095.

The seven rods were shipped offsite.

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FUEL CONDITION REPORT

Status Summary

SNM:

The SNM quantity in HD-43 has been reduced by the removal of seven of its rods. For specific SNM quantities for these seven removed rods, reference RLOC 03614-4093 & 4095.

Modification:

Removal of seven of the assembly's rods.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 12.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

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Assembly: HD-43

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FUEL CONDITION REPORT

Assembly

HD-44

Receipt & New Fuel (Unirradiated) Storage

Received on 12/23/68 (RLOC 03612-2129 to 2156 – HD-44 info found on 03612-2134) New Fuel Storage Vault Space 2K 12/31/68 RLOC 03612-1061.

Active Nuclear Service and Discharge

Cycle 5	Core Location 55-07	7/20/69-4/17/70	RLOC 03612-1422
Cycle 6	Core Location 54-07	5/9/70-6/5/71	RLOC 03612-1421

Discharged 6/19/71.

Irradiated Storage

SFP Location 62-07, 9/21/71, RLOC 03612-1212.

Bundle remained in this SFP location through SFP survey map dated 3/2/72, RLOC 03612-1202.

Bundle shown in the channel stripper on SFP survey may dated 3/4/72, RLOC 03612-1200.

SFP Location 61-05, 3/6/72, RLOC 03612-1199.

Bundle remained in this SFP location through SFP survey map dated 3/22/72, RLOC 03612-1186.

SFP Location 63-03, 3/23/72, RLOC 03612-1184.

Bundle remained in this SFP location through SFP survey map dated 3/24/72, RLOC 03612-1183.

SFP Location 56-16, 5/4/72, RLOC 03612-1180.

Bundle remained in this SFP location through SFP survey map dated 7/9/74, RLOC 03612-1162.

Fuel Movement for GE Rod Recovery, June 1974 procedure (RLOC 03614-4109 to 4111) calls for transfer of HD-44 from SFP 56-16 to SFP 62-02. This move is noted as completed 6/17/74.

SFP Location 62-02, 8/15/74, RLOC 03612-1161.

SFP Location 56-16, 9/27/74, RLOC 03612-1160.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 56-15, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

FUEL CONDITION REPORT

HD-44 was inspected during the period 2/22 to 3/10/72. RLOC 03615-1299; 03615-1303 & 1304. The inspection notes that rods D-5 and E-4 do not have lower end plugs (RLOC 03614-4287 to 4291).

During the reconstitution efforts of March 1972, rod E-2 was replaced by rod B-5 from assembly HD-16 (RLOC 03612-1181).

The reconstitution procedure used for this work is documented in RLOC 03614-4242 to 4250.

The GE Rod Recovery work during June 1974 resulted in the removal of two fuel rods from HD-44. RLOC 03614-4098 to 4111. The following notation is provided on RLOC 03614-4104:

"Bundle HD-44 disassembled, 6 rods checked by NDT (eddy current/ultrasonic) 2 rods failed, 2 questionable and 2 rods sound. Fuel rods E-3 (AT0001) and B-4 (AT0004) placed in shipping can #1 for return to VNC."

Curie content for the two removed rods is provided on RLOC 03614-4102.

GE Rod Recovery activities in August 1974 included removal of rod C-3 from assembly HD-44. RLOC 03614-4089 to 4095. The procedure step citing the removal of rod C-3 from HD-44 is found on RLOC 03614-4090. Isotopics for the removed rod is found on RLOC 03614-4095.

Status Summary

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SNM:

The exchange of rod E-2 with rod B-5 from assembly HD-16 resulted in a net gain of 24 grams U. RLOC 03615-1311 & 1312.

The removal of rods E-3 and B-4 during June 1974 resulted in reduction of assembly curie content of 1253 curies.

The removal of rod C-3 resulted in a decrease in assembly SNM. Reference RLOC 03614-4094 for curie content and RLOC 03614-4095 for isotopic content of the removed rod.

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FUEL CONDITION REPORT

Modification:

Three rods removed.

Rods D-5 and E-4 have no lower end plug.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 11.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

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Assembly: HD-44 . .

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FUEL CONDITION REPORT

Assembly

HD-45

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Receipt & New Fuel (Unirradiated) Storage

Received on 12/23/68 (RLOC 03612-2129 to 2156 – HD-45 info found on 03612-2134) New Fuel Storage Vault Space 2J 12/31/68 RLOC 03612-1061.

Active Nuclear Service and Discharge

Cycle 5	Core Location 60-08	7/20/69-4/17/70	RLOC 03612-1422
Cycle 6	Core Location 61-08	5/9/70-6/5/71	RLOC 03612-1421

Discharged 6/10/71.

Irradiated Storage

SFP Location 63-07, 9/21/71, RLOC 03612-1212. Bundle remained in this SFP location through SFP survey map dated 3/4/72, RLOC 03612-1200. Bundle shown in the channel stripper on SFP survey may dated 3/6/72, RLOC 03612-1199. SFP Location 62-01, 3/7/72, RLOC 03612-1197. Bundle remained in this SFP location through SFP survey map dated 3/11/72, RLOC 03612-1193. Bundle shown in the channel stripper on SFP survey may dated 3/14/72, RLOC 03612-1192. SFP Location 62-01, 3/15/72, RLOC 03612-1191. Bundle remained in this SFP location through SFP survey map dated 3/22/72, RLOC 03612-1186. Bundle shown in the channel stripper on SFP survey may dated 3/23/72, RLOC 03612-1184. SFP Location 63-04, 3/24/72, RLOC 03612-1183. SFP Location 55-15, 5/4/72, RLOC 03612-1180. Bundle remained in this SFP location through SFP survey map dated 7/9/74, RLOC 03612-1162. SFP Location 62-01, 8/15/74, RLOC 03612-1161. SFP Location 55-15, 9/27/74, RLOC 03612-1160. Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895. SFP Location 54-14, 12/2/84, RLOC 03633-2898. Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938. SFP Location 54-13, 7/27/87, RLOC 03633-2937.

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FUEL CONDITION REPORT

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

A summary report for fuel work activities during the period of 11/30 through 12/3/71 is provided in RLOC 03622-1108 to 1112. An informal report for the same activities may be found at RLOC 03622-1113 to 1118.

The reports list the six rods removed from HD-45 (rods B-2, B-3, C-2, C-4, D-3, & D-4) and their serial numbers, and isotope weights. The reports also note a sheared tie rod nut on rod C-6 and a clad defect on rod B-2 (note that B-2 was shipped offsite).

HD-45 was inspected during the period 2/22 to 3/10/72. RLOC 03615-1299; 03615-1304 & 1305. The inspection notes that rod C-6 has its existing sheared upper end plug and the six previously removed rods were noted (RLOC 03614-4292 to 4295).

Assembly HD-45 was subject to reconstitution activities during the period 3/20-3/23/72. RLOC 03615-1297-1312. During the reconstitution efforts of March 1972, rod A-3 of HD-45 was replaced by rod F-4 from assembly HD-16 (RLOC 03612-1182). The reconstitution procedure used for this work is documented in RLOC 03614-4242 to 4250.

A map of the final status of reconstituted assemblies is provided on RLOC 03612-1181 & 1182. The following rod is not original to assembly HD-45: A-3.

During the fuel rod removal effort of March 14 and 15, 1972, ten rods were removed from HD-45 (rods D-2, D-5, C-5, E-2, E-3, B-4, E-5, E-4, F-3, & D-1). Reference RLOC 00121-3815 to 3819. Hand notes related to the activities are found on RLOC 03614-4181 & 4182. The references have a listing of the isotopic weights for each of the removed rods.

GE Rod Recovery activities in August 1974 included removal of rod C-3 from assembly HD-45. RLOC 03614-4089 to 4095. The specific procedure step for the rod C-3 removal is found on RLOC 03614-4090. The report includes isotopic information for the removed rod (RLOC 03614-4095).

Status Summary

SNM:

A total of seventeen (17) of the assembly rods have been removed and shipped offsite.

Rod A-3 has been replaced by rod F-4 from assembly HD-16. The net change in SNM is -1 gram U (RLOC 03614-4322).

Modification:

FUEL CONDITION REPORT

Seventeen rods removed. Sheared tie rod nut on rod C-6.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 07.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

Assembly: HD-45

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		. 2 L			Rod Removed.		· · ·			andlin	urnup 254)	ate (R 129)	ssemb uel Tyj
1.11.11.11.11						1.				Handling Notes:	(Refere	eferen	Assembly: HD-45 Fuel Type: GE Ty
2			Rod Removed.	Rod Removed.	Rod Removed.	Rod Removed.	· · · ·				Burnup (Reference Record Location): 11641.05 (RLOC 05775-2966 through 3254)	Date (Reference Record Location) of Fuel Receipt: 12/23/68 (RLOC 03612- 2129)	Assembly: HD-45 Fuel Type: GE Type III
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3:	· ·		Rod Removed.	Rod Removed.	Rod Removed.	Rod Removed.	Rod Removed.				ocation)	tion) of	, 3 1 -
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STOR	-				••			· · ·	<i>x.</i>		6 throug	C 03612	
6.				Sheared top end					•		, df	12	
が語る	•			plug stud. Rod could not be	· · · ·	• •			;	•	4 ,	-	
Section 1	· • •		· · ·	seated in bottom tie plate. Rod						· · · · · · · · · · · · · · · · · · ·	· · ·		

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FUEL CONDITION REPORT

Assembly

HD-46

Receipt & New Fuel (Unirradiated) Storage

Received on 12/23/68 (RLOC 03612-2129 to 2156 – HD-46 info found on 03612-2134) New Fuel Storage Vault Space 2H 12/31/68 RLOC 03612-1061.

Active Nuclear Service and Discharge

Cycle 5	Core Location 60-06	7/20/69-4/17/70	RLOC 03612-1422
Cycle 6	Core Location 60-06	5/9/70-6/5/71	RLOC 03612-1421
Cycle 7	Core Location 56-09	8/26/71-8/25/72	RLOC 03612-1420
Cycle 8	Core Location 61-12	10/6/72-9/1/73	RLOC 03612-1419

Discharged 9/14/73.

Irradiated Storage

SFP Location 56-04, 11/13/73, RLOC 03612-1164.

Bundle remained in this SFP location through SFP survey map "Following January 11, 1974 Fuel movements", RLOC 03612-1163.

SFP Location 62-09, 7/9/74, RLOC 03612-1162.

Bundle remained in this SFP location through SFP survey map dated 8/15/74, RLOC 03612-1161.

SFP Location 64-09, 9/27/74, RLOC 03612-1160.

Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895.

SFP Location 71-02, 12/2/84, RLOC 03633-2898.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 71-01, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

The GE Rod Recovery work during June 1974 is documented in RLOC 03614-4098 to 4111. The following notation is provided on RLOC 03614-4104:

"Bundle HD-46 Trouble! All tie rod nuts removed and nuts broken off. Tie plate could not be removed. Bundle was sling with stainless steel cables similar to Bundle B-14. Bundle was removed to pool storage."

FUEL CONDITION REPORT

The procedure for the fuel work (RLOC 03614-4110) has the following handwritten note on the procedure step for bundle HD-46:

Rods removed: "None. 7 bundle tie rod nuts broken off – 1 screwed off. Bundle slung with SS cables to hold it together." **Status Summary**

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SNM: No change to assembly SNM quantities.

Modification:

7 bundle tie rod nuts broken off.

1 tie rod nut screwed off.

Bundle slung with SS cables to hold it together.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 25.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

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Assembly: HD-46

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E STATISTICS LANDAUS		1 8 79218752873	Tie rod nut removed. Only one of eight studs intact.	Tie rod nut removed. Only one of eight studs intact.		Handling Notes: SPECIAL HANDLING REQURIED. HELD TOGETHER BY STEEL CABLE.	Burnup (Reference Record Location): 20853.56 (RLOC 05775-2966 through 3254)	Date (Reference Record Location) of Fuel Receipt: 12/23/68 (RLOC 03612- 2129)	Fuel Type: GE Type III	Assembly: HD-46
	Tie rod nut removed. Only one of eight studs intact. Tie rod nut removed. Only one of eight studs intact.				Tie rod nut removed. Only one of eight studs intact. Tie rod nut removed. Only one of eight studs intact.	ANDLING REQURIED. HELC	ocation): 20853.56 (RLOC 0;	ation) of Fuel Receipt: 12/23/		
			Tie rod nut removed. Only one of eight studs intact.	Tie rod nut removed. Only one of eight studs intact.		TOGETHER BY STEEL	775-2966 through ج	68 (RLOC 03612-		

FUEL CONDITION REPORT

Assembly

NEW DECEMBER

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HD-47

Receipt & New Fuel (Unirradiated) Storage

Received on 12/23/68 (RLOC 03612-2129 to 2156 – HD-47 info found on 03612-2134) New Fuel Storage Vault Space 2G 12/31/68 RLOC 03612-1061.

Active Nuclear Service and Discharge

Cycle 5	Core Location 51-05	7/20/69-4/17/70	RLOC 03612-1422
Cycle 6	Core Location 53-05	5/9/70-6/5/71	RLOC 03612-1421
Cycle 7	Core Location 60-01	8/26/71-8/25/72	RLOC 03612-1420
Cycle 8	Core Location 56-08	10/6/72-9/1/73	RLOC 03612-1419

Discharged 9/5/73.

Irradiated Storage

SFP Location 64-06, 11/13/73, RLOC 03612-1164.

SFP Location 64-16, "Following January 11, 1974 Fuel movements.", RLOC 03612-1163.

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SFP Location 64-01, 7/9/74, RLOC 03612-1162.

Bundle remained in this SFP location through SFP survey map dated 8/15/74, RLOC 03612-1161.

SFP Location 64-16, 9/27/74, RLOC 03612-1160.

Bundle remained in this SFP location through SFP survey map dated 8/14/75, RLOC 03612-1156.

SFP Location 70-08, 8/12/76, RLOC 03612-1154.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 70-07, 7/27/87, RLOC 03633-2937. NOTE: Assembly is mislabeled as XD-47 on survey maps dated 7/27/87, 7/18/88, and 7/13/89.

Bundle remained in this SFP location through SFP survey map dated 5/12/00. SFP Location 71-14, 3/1/01.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

The GE Rod Recovery work during June 1974 is documented in RLOC 03614-4098 to 4111. The following notation is provided on RLOC 03614-4105:

FUEL CONDITION REPORT

"Please leave HD-47 in elevator. Could not remove tie plate. We are going to try trepanning this bundle this afternoon."

The procedure for the fuel work (RLOC 03614-4109 through 4111) has the following handwritten note on the procedure step for bundle HD-46 (RLOC 03614-4110):

Rods removed: "None - tie plate stuck on tie rods"

GE Rod Recovery activities in August 1974 included removal of rod E-5 from assembly HD-47. RLOC 03614-4089 to 4095. The specific procedure step for the removal of rod E-5 is found on RLOC 03614-4091. The isotopic information for the removed rod is found on RLOC 03614-4093.

Status Summary

SNM:

The SNM quantity in HD-47 has been reduced by the removal of one (E-5) of its rods. For specific SNM quantities for this removed rod, reference RLOC 03614-4093.

Modification:

The top tie plate is stuck on the tie rods.

No additional evidence was found regarding the trepanning alluded to on RLOC 03614-4105.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 23.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

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FUEL CONDITION REPORT

Assembly

HD-48

Receipt & New Fuel (Unirradiated) Storage

Received on 12/23/68 (RLOC 03612-2129 to 2156 – HD-48 info found on 03612-2134) New Fuel Storage Vault Space 2F 12/31/68 RLOC 03612-1061.

Active Nuclear Service and Discharge

Cycle 5	Core Location 57-07	7/20/69-4/17/70	RLOC 03612-1422
Cycle 6	Core Location 56-07	5/9/70-6/5/71	RLOC 03612-1421

Discharged 6/10/71.

Irradiated Storage

SFP Location 61-09, 9/21/71, RLOC 03612-1212. Bundle remained in this SFP location through SFP survey map dated 3/6/72, RLOC 03612-1199. SFP Location 62-02, 3/7/72, RLOC 03612-1197. Bundle remained in this SFP location through SFP survey map dated 3/23/72, RLOC 03612-1184. SFP Location 63-05, 3/24/72, RLOC 03612-1183. SFP Location 54-15, 5/4/72, RLOC 03612-1180. Bundle remained in this SFP location through SFP survey map dated 10/27/72, RLOC 03612-1170. SFP Location 55-10, 2/16/73, RLOC 03612-1169. Bundle remained in this SFP location through SFP survey map dated 11/13/73, RLOC 03612-1164. SFP Location 52-15, "Following January 11, 1974 Fuel movements.", RLOC 03612-1163. Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895. SFP Location 52-14, 12/2/84, RLOC 03633-2898. Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938. SFP Location 52-13, 7/27/87, RLOC 03633-2937. Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

FUEL CONDITION REPORT

A summary report for fuel work activities during the period of 11/30 through 12/3/71 is provided in RLOC 03622-1108 to 1112. An informal report for the same activities may be found at RLOC 03622-1113 to 1118.

The reports list the five rods removed from HD-48 (rods A-2, B-2, C-4, D-1, & D-3) and their serial numbers, and isotope weights. The reports also notes that A-3 has a frozen nut on the upper end plug stud and the A-3 rod is not fully seated in the bottom tie plate.

HD-48 was inspected during the period 2/22 to 3/10/72. RLOC 03615-1299; 03615-1305 & 1306; RLOC 03614-4296 to 4301. The inspection notes that rod A-3 has its upper tie plate nut frozen on upper end plug, and rod A-6 has no lower end plug. Also, the five previously removed rods were noted on the inspection documentation.

GE Rod Recovery actions during November 1972 are documented in RLOC 03614-4156 through 4161. A total of five rods (E-2, B-5, F-6, E-6 & F-3) were removed from the assembly. Report notes related to HD-48 appear on RLOC 03614-4158:

"Bundle HD-48 was moved into the elevator and the bundle was quickly disassembled. (this bundle had been disassembled earlier in November of 71) Rods E-2 and B-5 were placed into Treet-2 liner #1 and rods F-6, E-6 and F-3 were placed into liner #2. Bundle HD-48 was reassembled and put back into storage."

Status Summary

SNM:

The SNM quantity in HD-48 has been reduced by the removal of ten of its rods.

Modification:

Rod A-3 has its upper tie plate nut frozen. Rod A-3 is not fully reseated in the bottom tie plate. Rod A-6 has no lower end plug.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 03.

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The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

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Assembly: HD-48

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STEWER W				Rod Removed.					Handling Notes:	Burnup (Reference 3254)	Date (Reference 2129)	Fuel Type: GE Type III	Assembly: HD-48
2	Rod Removed.	Rod Removed.			Rod Removed.				<u>s:</u>	ce Record Location): 11275.46 (RLOC 05775-2966 through ح	Date (Reference Record Location) of Fuel Receipt: 12/23/68 (RLOC 03612- 2129)	/pe III	ò
3 WEARS AND A	Frozen tie plate nut. Rod not reseated in bottom tie plate.			Rod Removed.		Rod Removed.							
			Rod Removed.								ot: 12/23/68 (RL		
5		Rod Removed.								966 through	.OC 03612-		
6.71	No lower end plug.				Rod Removed.	Rod Removed.						-	

FUEL CONDITION REPORT

Assembly 이 지수는 영국 경험을 가장하는 것이 있는 것이다. **HE-06** astar star Receipt & New Fuel (Unirradiated) Storage 1.1.1 Received on 3/4/70 (RLOC 03612-2162 to 2173 - HE-06 info found on 03612-2167 & 2171) ~ New Fuel Storage Vault Space 4B 3/4/70 through 3/19/70 RLOC 03612-1055 to 1057. Active Nuclear Service and Discharge Core Location 60-11 5/9/70-6/5/71 RLOC 03612-1421 Cvcle 6 the second s · · · Discharged 6/30/71. . . Irradiated Storage SFP Location 62-05, 9/21/71, RLOC 03612-1212. Bundle remained in this SFP location through SFP survey map dated 2/28/72, RLOC 03612-1206. Bundle is shown in channel stripper on SFP survey map dated 2/29/72, RLOC 03612-1205. Saaf Saar SFP Location 60-03, 3/1/72, RLOC 03612-1204. Bundle remained in this SFP location through SFP survey map dated 3/15/72, RLOC 03612-1191. Bundle is shown in channel stripper on SFP survey map dated 3/20/72, RLOC 03612-1190. SFP Location 60-03, 3/21/72, RLOC 03612-1188. . . . Bundle remained in this SFP location through SFP survey map dated 3/24/72, RLOC 03612-1183. 03612-1183. SFP Location 54-16, 5/4/72, RLOC 03612-1180. Bundle remained in this SFP location through SFP survey map dated 2/16/73 RLOC 03612-1169. SFP Location 53-09, 4/26/73, RLOC 03612-1167. Bundle remained in this SFP location through SFP survey map dated 11/13/73, RLOC 03612-1164. SFP Location 53-15, "Following January 11, 1974 Fuel movements.", RLOC 03612-, 1163. Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895. SFP Location 52-15, 12/2/84, RLOC 03633-2898.

FUEL CONDITION REPORT

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938. SFP Location 52-14, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

HE-06 was inspected during the period 2/22 to 3/10/72. RLOC 03615-1299; 03615-1302; RLOC 03614-4272 to 4275. The inspection notes that rod E-2 was dropped after completion of its NDT and rod D-6 failed its UT NDT.

Assembly was subject to reconstitution activities during the period 3/20-3/22/72. RLOC 03615-1297-1312.

A map of the final status of reconstituted assemblies is provided on RLOC 03612-1181 & 1182. HE-06 has its full complement of original fuel rods.

The following text appears on RLOC 03615-1301:

"There existed a potential for five reconstituted assemblies. However, due to the inability to remove the D-6 tie rod in bundle HE-6, only four bundles were reconstituted. The D-6 tie rod had been removed twice previously for NDT and visual inspection with no apparent problems. It is the consensus that due to the excessive crud present during rod movement and rod cleaning, possibly some hard crud or metallic foreign material lodged in the bottom tie plate. The final attempt to remove the rod with a keyed socket to fit over the end plug resulted in shearing the bottom end plug."

During the GE visit of April 1973 (Reference RLOC 03614-4113 through 4131) the HE-06 bundle was manipulated and rods removed. The report contains the following discussion concerning HE-06 (RLOC 03614-4116):

"...and bundle HE-6 installed. Bundle HE-6 had been previously disassembled in 1971, and no disassembly problems were encountered. The desired rods were removed and stored in the proper shipping containers. Two (2) dummy tie rods were also installed in this bundle at locations C-6 and F-3 [sic - should be F-4]. This bundle is held together by six (6) rods at location C-1, D-1, F-3, C-6, A-4 and A-3. (see attached matrix sheet) Bundle HE-6 was swapped for bundle HE-23."

Note that the matrix for HE-6 shows the rod serial numbers for the eleven rods removed and is found on RLOC 03614-4122. The eleven rod locations are B-1, A-2, C-4, D-4, B-5, F-3, F-4, D-3, C-2, B-3, & C-6.

Status Summary

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FUEL CONDITION REPORT

SNM:

The SNM quantity in HE-06 has been reduced by the removal of eleven of its rods.

Modification: A subsection of a state of the part of the

Rods C-6 and F-4 are dummy tie rods.

Rod D-6 has a sheared bottom end plug and notes indicate rod is failed. Rod E-2 has been dropped by over 2 inches.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 04.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

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Assembly: HE-06

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		Rod Removed.						Handling Notes:	urnup (Referer 254)	Date (Reference Record Location) of Fuel Receipt: 3/4/70 (RLOC 03612-2162)	Fuel Type: GE Type III	Assembly: HE-06
2 3 3 3 3 3 4	Rod Removed.		Rod Removed.		Rod dropped >2 inches.				ice Record Loc	Record Locat	ype III	<u>6</u>
STERE WW		Rod Removed.		Rod Removed.		Rod Removed.			cation): 6119.3	ion) of Fuel Re		
States and a second sec			Rod Removed.	Rod Removed.		Dummy tie rod.		Burnup (Reference Record Location): 6119.33 (RLOC 05775-2966 through 3254) Handling Notes:	3 (RLOC 0577	ceipt: 3/4/70 (I		
5		Rod Removed.							5-2966 through	RLOC 03612-2		
6 33 3V 3V			Dummy tie rod.	Sheared bottom end plug. Notes indicate rod is failed.				1		162)		

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FUEL CONDITION REPORT

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Assembly

HE-23

Receipt & New Fuel (Unirradiated) Storage

Received on 3/16/70 (RLOC 03612-2174 to 2186 – HE-23 info found on 03612-2178) New Fuel Storage Vault Space 4P 3/17/70 to 3/26/70 RLOC 03612-1054 to 1056.

SFP Location 67-04, 3/28/70 through 4/10/70, RLOC 03612-1317 & 1318.

Active Nuclear Service and Discharge

Cycle 6	Core Location 53-06	5/9/70-6/5/71	RLOC 03612-1421
Cycle 7	Core Location 53-05	8/26/71-8/25/72	RLOC 03612-1420

Discharged 9/2/72.

Irradiated Storage

SFP Location 54-08, 10/27/72, RLOC 03612-1170.

Bundle remained in this SFP location through SFP survey map dated 2/16/73, RLOC 03612-1169.

SFP Location 53-08, 4/26/73, RLOC 03612-1167.

Bundle remained in this SFP location through SFP survey map dated 11/13/73, RLOC 03612-1164.

SFP Location 52-16, "Following January 11, 1974 Fuel movements.", RLOC 03612-1163.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 52-15, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

During the GE visit of April 1973 (Reference RLOC 03614-4113 through 4131) the HE-23 bundle was manipulated and rods removed. The report contains the following discussion concerning HE-23 (RLOC 03614-4117):

"...was swapped for bundle HE-23. No disassembly problems were encountered during the disassembly of bundle HE-23. However, the six (6) rods under the blind holes in the upper tie plate were again stuck in the tie plate. The method described for removing rods from bundle HE-43 was again used for removing two (2) of the five (5) contiguous rods listed. (see attached matrix sheet) Bundle HE-23 was reassembled as is and swapped for bundle B-29."

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FUEL CONDITION REPORT

Note that the matrix for HE-23 is found on RLOC 03614-4123, and shows rods B-3 and C-2 (with their respective serial numbers) as removed and indicates rods A-1, F-1, E-2, B-5, and F-6 as stuck in upper tie plate.

Status Summary

SNM:

The SNM quantity in HE-23 has been reduced by the removal of two of its rods, B-3 and C-2.

Modification:

Rods A-1, F-1, E-2, B-5, and F-6 are stuck in upper tie plate.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 05.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

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FUEL CONDITION REPORT

Assembly

HE-36

Receipt & New Fuel (Unirradiated) Storage

Received on 3/16/70 (RLOC 03612-2174 to 2186 – HE-36 info found on 03612-2177) New Fuel Storage Vault Space 2M 3/17/70 to 4/20/70 RLOC 03612-1047 to 1056.

Active Nuclear Service and Discharge

Cycle 6	Core Location 54-08	5/9/70-6/5/71	RLOC 03612-1421
Cycle 7	Core Location 55-10	8/26/71-8/25/72	RLOC 03612-1420
Cycle 8	Core Location 60-06	10/6/72-9/1/73	RLOC 03612-1419
Cycle 9	Core Location 56-14	10/2/73-10/30/74	RLOC 03612-1418

Discharged 11/13/74.

Irradiated Storage

SFP Location 55-07, 1/9/75, RLOC 03612-1159.
SFP Location 60-10, 6/75, RLOC 03612-1158.
Bundle remained in this SFP location through SFP survey map dated 8/3/83, RLOC 03612-1145.
SFP Location 6, 2/23/84, RLOC 03633-2897.
Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.
SFP Location 55-16, 7/27/87, RLOC 03633-2937.
Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

Modification to unirradiated assembly HE-36:

GE indicated a desire to install removable rod bundles for their testing of high performance fuel rods and control rod surveillance rods. The description of the testing is provided in a letter dated March 3, 1970, reference RLOC 00145-3488 through 3490.

The results of installation of the test rods is documented in a letter dated May 21, 1970, reference RLOC 03622-0635 & 0636. This letter provides serial numbers and isotopic data for the thirteen rods that were removed to accommodate the control rod surveillance rods and the four high performance rods.

FUEL CONDITION REPORT

The thirteen rods were never irradiated. The rods were shipped from HBPP to GE in September 1982. Reference RLOC 03622-3605 through 3629.

For HE-36, two unirradiated fuel rods were removed (B-2 & E-5) and replaced with boron carbide absorber rods.

Modification to irradiated assembly HE-36:

In 1981, GE retrieved some of these boron surveillance rods. The GE visit and activities are documented by a HBPP plant temporary procedure that includes signatures of individuals performing the procedure (RLOC 03622-3403 through 3407), a GE procedure on HBPP segmented surveillance rod removal (RLOC 03622-3452 through 3456), a GE memo to PG&E describing the operation (RLOC 03622-3457 through 3459), and handwritten notes indicating when steps of the HBPP procedure were accomplished (RLOC 03622-3439).

The following major activities were performed. HE-36: One B4C surveillance rod removed from location E-5.

Status Summary

SNM:

The SNM quantity in HE-36 has been reduced by the removal of two of its rods. For specific SNM quantities for these two removed rods, reference RLOC 03622-0635 & 0636.

Modification:

Installation of two boron surveillance rods at locations B-2 and E-5. The rod at E-5 has since been removed and returned to GE.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 09.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.



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MODIFIED ASSEMBLY MAP

Assembly: HE-36

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2:212:22:22:20		B4C Rod.							Burnup (Reference Record Location): 19798.35 (RLOC 05775-2966 through 3254)	Date (Reference Record Location) of Fuel Receipt: 3/16/70 (RLOC 03612-2174)	「ype III	6
3									cation): 19798.3	ion) of Fuel Re		
Allenations									35 (RLOC 057	ceipt: 3/16/70 (
51 ACT TO A					Rod Removed.			4	75-2966 throug	(RLOC 03612-:		
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PG&E Letter HBL-05-017 Enclosure 4

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FUEL CONDITION REPORT

Assembly

HE-37

Receipt & New Fuel (Unirradiated) Storage

 Received on 3/16/70 (RLOC 03612-2174 to 2186 – HE-37 info found on 03612-2177)

 New Fuel Storage Vault Space 2J

 3/17/70 to 4/9/70
 RLOC 03612-1050 to

 1056.
 4/13/70
 RLOC 03612-1049.

 New Fuel Storage Vault Space 3J
 4/13/70
 RLOC 03612-1049.

 New Fuel Storage Vault Space 2J
 4/16/70 to 4/20/70
 RLOC 03612-1049.

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Active Nuclear Service and Discharge

Cycle 6	Core Location 58-11	5/9/70-6/5/71	RLOC 03612-1421
Cycle 7	Core Location 60-10	8/26/71-8/25/72	RLOC 03612-1420
Cycle 8	Core Location 56-05	10/6/72-9/1/73	RLOC 03612-1419
Cycle 9	Core Location 64-09	10/2/73-10/30/74	RLOC 03612-1418

Discharged 11/7/74.

Irradiated Storage

SFP Location 55-06, 1/9/75, RLOC 03612-1159.

SFP Location 66-04, 6/75, RLOC 03612-1158.

Bundle remained in this SFP location through SFP survey map dated 8/3/83, RLOC 03612-1145.

S. Barrisson and S.

SFP Location 66-14, 2/23/84, RLOC 03633-2897.

Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895.

SFP Location 67-02, 12/2/84, RLOC 03633-2898.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 67-01, 7/27/87, RLOC 03633-2937.

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Bundle remains in this SFP location through map dated 12/27/04.

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FUEL CONDITION REPORT

Reconstitution/Modification Activities

Modification to unirradiated assembly HE-37:

GE indicated a desire to install removable rod bundles for their testing of high performance fuel rods and control rod surveillance rods. The description of the testing is provided in a letter dated March 3, 1970, reference RLOC 00145-3488 through 3490.

The results of installation of the test rods is documented in a letter dated May 21, 1970, reference RLOC 03622-0635 & 0636. This letter provides serial numbers and isotopic data for the thirteen rods that were removed to accommodate the control rod surveillance rods and the four high performance rods.

The thirteen rods were never irradiated. The rods were shipped from HBPP to GE in September 1982. Reference RLOC 03622-3605 through 3629.

For HE-37, two unirradiated fuel rods were removed (B-2 & E-5) and replaced with boron carbide absorber rods.

Modification to irradiated assembly HE-37:

In 1981, GE retrieved some of these boron surveillance rods. The GE visit and activities are documented by a HBPP plant temporary procedure that includes signatures of individuals performing the procedure (RLOC 03622-3403 through 3407), a GE procedure on HBPP segmented surveillance rod removal (RLOC 03622-3452 through 3456), a GE memo to PG&E describing the operation (RLOC 03622-3457 through 3459), and handwritten notes indicating when steps of the HBPP procedure were accomplished (RLOC 03622-3439).

The following major activities were performed. HE-37: Two B4C surveillance rods removed.

Status Summary

SNM:

The SNM quantity in HE-37 has been reduced by the removal of two of its rods. For specific SNM quantities for these two removed rods, reference RLOC 03622-0635 & 0636.

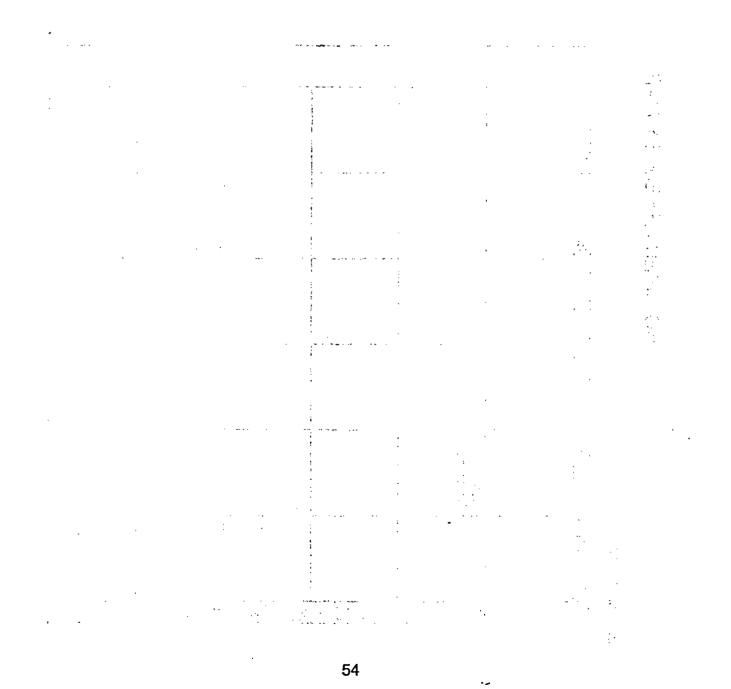
Modification:

Installation of two boron surveillance rods at locations B-2 and E-5. Both rods have since been removed and returned to GE.

FUEL CONDITION REPORT

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 18.



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MODIFIED ASSEMBLY MAP

Assembly: HE-37

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53	A	BRANKER	Divideabilities	Estate	Freeder					
は新聞の語						Handling Notes:	3urnup (Refere hrough3254)	Date (Referenc	Fuel Type: GE Type III	Assembly: HE-37
12		Rod Removed.					Burnup (Reference Record Location): 19795.89 (RLOC 05775-2966 through3254)	Date (Reference Record Location) of Fuel Receipt: 3/16/70 (RLOC 03612-2174)	Type III	3 7
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4.88.99	,						39 (RLOC 057)	ceipt: 3/16/70 (
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FUEL CONDITION REPORT

Assembly	a a a sa sa sa	ensetter -	· · ·
HE-38		ALLASIA DESTR	x • •

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Received on 3/16/70 (RLOC 03612-2174 to 2186 - HE-38 info found on 03612-2177) New Fuel Storage Vault Space 2H 3/17/70 to 4/9/70 RLOC 03612-1050 to 1056.

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 New Fuel Storage Vault Space 3H
 4/13/70
 RLOC 03612-1049.

 New Fuel Storage Vault Space 2H
 4/16/70 to 4/20/70
 RLOC 03612-1047.

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1. P. 2. Statistics and the Active Nuclear Service and Discharge

Cycle 7	Core Location 61-07	5/9/70-6/5/71	RLOC 03612-1421
	Core Location 60-05	8/26/71-8/25/72	RLOC 03612-1420
Cycle 8	Core Location 59-10	10/6/72-9/1/73	RLOC 03612-1419
Cycle 9	Core Location 51-06	10/2/73-10/30/74	RLOC 03612-1418
Discharged	11/12/74.		

Irradiated Storage

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SFP Location 53-07, 1/9/75, RLOC 03612-1159.

SFP Location 62-10, 6/75, RLOC 03612-1158.

Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895.

SFP Location 51-04, 12/2/84, RLOC 03633-2898.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938. SFP Location 51-03, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

Modification to unirradiated assembly HE-38:

GE indicated a desire to install removable rod bundles for their testing of high performance fuel rods and control rod surveillance rods. The description of the testing is provided in a letter dated March 3, 1970, reference RLOC 00145-3488 through 3490.

The results of installation of the test rods is documented in a letter dated May 21, 1970, reference RLOC 03622-0635 & 0636. This letter provides serial numbers and isotopic

FUEL CONDITION REPORT

data for the thirteen rods that were removed to accommodate the control rod surveillance rods and the four high performance rods.

The thirteen rods were never irradiated. The rods were shipped from HBPP to GE in September 1982. Reference RLOC 03622-3605 through 3629.

For HE-38, two unirradiated fuel rods were removed (B-2 & E-5) and replaced with boron carbide absorber rods.

Modification to irradiated assembly HE-38:

In 1981, GE retrieved some of these boron surveillance rods. The GE visit and activities are documented by a HBPP plant temporary procedure that includes signatures of individuals performing the procedure (RLOC 03622-3403 through 3407), a GE procedure on HBPP segmented surveillance rod removal (RLOC 03622-3452 through 3456), a GE memo to PG&E describing the operation (RLOC 03622-3457 through 3459), and handwritten notes indicating when steps of the HBPP procedure were accomplished (RLOC 03622-3439).

The following major activities were performed. HE-38: One B4C surveillance rod removed (E-5).

Status Summary

SNM:

The SNM quantity in HE-38 has been reduced by the removal of two of its rods. For specific SNM quantities for these two removed rods, reference RLOC 03622-0635 & 0636.

Modification:

Installation of two boron surveillance rods at locations B-2 and E-5. The rod at E-5 has since been removed and returned to GE.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 02.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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Assembly: HE-38

MODIFIED ASSEMBLY MAP

Assembly: HE-38

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FUEL CONDITION REPORT

Assembly

HE-39

Receipt & New Fuel (Unirradiated) Storage

 Received on 3/16/70 (RLOC 03612-2174 to 2186 – HE-39 info found on 03612-2177)

 New Fuel Storage Vault Space 2D
 3/17/70 to 4/16/70

 RLOC 03612-1048 to

 1056.

 New Fuel Storage Vault Space 2E
 4/20/70

 RLOC 03612-1047.

Active Nuclear Service and Discharge

Cycle 6	Core Location 57-04	5/9/70-6/5/71	RLOC 03612-1421
Cycle 7	Core Location 55-05	8/26/71-8/25/72	RLOC 03612-1420
Cycle 8	Core Location 55-09	10/6/72-9/1/73	RLOC 03612-1419
Cycle 9	Core Location 59-01	10/2/73-10/30/74	RLOC 03612-1418

Discharged 11/12/74.

Irradiated Storage

SFP Location 53-06, 1/9/75, RLOC 03612-1159. SFP Location 64-04, 6/75, RLOC 03612-1158. Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938. SFP Location 64-03, 7/27/87, RLOC 03633-2937. Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

Modification to unirradiated assembly HE-39:

GE indicated a desire to install removable rod bundles for their testing of high performance fuel rods and control rod surveillance rods. The description of the testing is provided in a letter dated March 3, 1970, reference RLOC 00145-3488 through 3490.

The results of installation of the test rods is documented in a letter dated May 21, 1970, reference RLOC 03622-0635 & 0636. This letter provides serial numbers and isotopic data for the thirteen rods that were removed to accommodate the control rod surveillance rods and the four high performance rods.

The thirteen rods were never irradiated. The rods were shipped from HBPP to GE in September 1982. Reference RLOC 03622-3605 through 3629.

FUEL CONDITION REPORT

For HE-39, two unirradiated fuel rods were removed (B-2 & E-5) and replaced with boron carbide absorber rods. the second second

Modification to irradiated assembly HE-39:

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In 1981, GE retrieved some of these boron surveillance rods. The GE visit and activities are documented by a HBPP plant temporary procedure that includes signatures of individuals performing the procedure (RLOC 03622-3403 through 3407), a GE procedure on HBPP segmented surveillance rod removal (RLOC 03622-3452 through 3456), a GE memo to PG&E describing the operation (RLOC 03622-3457 through 3459), and handwritten notes indicating when steps of the HBPP procedure were accomplished (RLOC 03622-3439).

The following major activities were performed. HE-39: Two B4C surveillance rods removed (B-2 & E-5).

Status Summary

SNM:

The SNM quantity in HE-39 has been reduced by the removal of two of its rods. For specific SNM quantities for these two removed rods, reference RLOC 03622-0635 & 0636.

Modification:

Installation of two boron surveillance rods at locations B-2 and E-5. The two rods have since been removed and returned to GE.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 17.

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MODIFIED ASSEMBLY MAP

Assembly: HE-39

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FUEL CONDITION REPORT

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Assembly

HE-40

Receipt & New Fuel (Unirradiated) Storage

Received on 3/16/70 (RLOC 03612-2174 to 2186 – HE-40 info found on 03612-2177) New Fuel Storage Vault Space 3P 3/17/70 to 4/20/70 RLOC 03612-1047 to 1056.

Active Nuclear Service and Discharge

Cycle 6	Core Location 61-05	5/9/70-6/5/71	RLOC 03612-1421
Cycle 7	Core Location 53-12	8/26/71-8/25/72	RLOC 03612-1420
Cycle 8	Core Location 59-05	10/6/72-9/1/73	RLOC 03612-1419
Cycle 9	Core Location 59-05	10/2/73-10/30/74	RLOC 03612-1418

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Discharged 11/11/74.

Irradiated Storage

SFP Location 53-05, 1/9/75, RLOC 03612-1159.

SFP Location 66-03, 6/75, RLOC 03612-1158.

Bundle remained in this SFP location through SFP survey map dated 8/3/83, RLOC 03612-1145.

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SFP Location 70-13, 2/23/84, RLOC 03633-2897.

Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895.

SFP Location 59-02, 12/2/84, RLOC 03633-2898.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 59-01, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

Modification to unirradiated assembly HE-40:

GE indicated a desire to install removable rod bundles for their testing of high performance fuel rods and control rod surveillance rods. The description of the testing is provided in a letter dated March 3, 1970, reference RLOC 00145-3488 through 3490.

The results of installation of the test rods is documented in a letter dated May 21, 1970, reference RLOC 03622-0635 & 0636. This letter provides serial numbers and isotopic

FUEL CONDITION REPORT

data for the thirteen rods that were removed to accommodate the control rod surveillance rods and the four high performance rods.

The thirteen rods were never irradiated. The rods were shipped from HBPP to GE in September 1982. Reference RLOC 03622-3605 through 3629.

For HE-40, one unirradiated fuel rod was removed (B-2) and replaced with a boron carbide absorber rod.

Modification to irradiated assembly HE-40:

In 1981, GE retrieved some of these boron surveillance rods. The GE visit and activities are documented by a HBPP plant temporary procedure that includes signatures of individuals performing the procedure (RLOC 03622-3403 through 3407), a GE procedure on HBPP segmented surveillance rod removal (RLOC 03622-3452 through 3456), a GE memo to PG&E describing the operation (RLOC 03622-3457 through 3459), and handwritten notes indicating when steps of the HBPP procedure were accomplished (RLOC 03622-3439).

The following major activities were performed. HE-40: One B4C surveillance rod removed (B-2).

Status Summary

SNM:

The SNM quantity in HE-40 has been reduced by the removal of one of its rods. For specific SNM quantities for the removed rod, reference RLOC 03622-0635 & 0636.

Modification:

Installation of a boron surveillance rod at location B-2. The rod has since been removed and returned to GE.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 16.

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MODIFIED ASSEMBLY MAP

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Assembly: HE-40

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312304729213							-	 Handling Notes:	ate (Reference urnup (Referer 2541	Assembly: HE-40 Fuel Type: GE Type III
2765-1911-001		Rod Removed.							Record Locat	0 Ype III
5.1443年1444年1448									ion) of Fuel Re ation): 20653.	
								• .	ceipt: 3/16/70 99 (RLOC 057	· • •
· · · · · · · · · · · · · · · · · · ·									Date (Reference Record Location) of Fuel Receipt: 3/16/70 (RLOC 03612-2174) Burnup (Reference Record Location): 20653.99 (RLOC 05775-2966 through	
District Frankling					· · · · · · · · · · · · · · · · · · ·			1	-2174) gh	

FUEL CONDITION REPORT

Assembly

HE-41

Receipt & New Fuel (Unirradiated) Storage

Received on 3/16/70 (RLOC 03612-2174 to 2186 – HE-41 info found on 03612-2177) New Fuel Storage Vault Space 2P 3/17/70 to 4/20/70 RLOC 03612-1047 to 1056.

Active Nuclear Service and Discharge

Cycle 6	Core Location 52-10	5/9/70-6/5/71	RLOC 03612-1421
Cycle 7	Core Location 58-09	8/26/71-8/25/72	RLOC 03612-1420
Cycle 8	Core Location 64-07	10/6/72-9/1/73	RLOC 03612-1419

Discharged 9/8/73.

Irradiated Storage

SFP Location 63-02, 11/13/73, RLOC 03612-1164.

Bundle remained in this SFP location through SFP survey map "Following January 11, 1974 Fuel movements.", RLOC 03612-1163.

SFP Location 63-15, 7/9/74, RLOC 03612-1162.

Bundle remained in this SFP location through SFP survey map dated 8/14/75, RLOC 03612-1156.

SFP Location 71-07, 8/12/76, RLOC 03612-1154.

Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895.

SFP Location 70-16, 12/2/84, RLOC 03633-2898.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 70-15, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

Modification to unirradiated assembly HE-41:

GE indicated a desire to install removable rod bundles for their testing of high performance fuel rods and control rod surveillance rods. The description of the testing is provided in a letter dated March 3, 1970, reference RLOC 00145-3488 through 3490.

FUEL CONDITION REPORT

The results of installation of the test rods is documented in a letter dated May 21, 1970, reference RLOC 03622-0635 & 0636. This letter provides serial numbers and isotopic data for the thirteen rods that were removed to accommodate the control rod surveillance rods and the four high performance rods.

The thirteen rods were never irradiated. The rods were shipped from HBPP to GE in September 1982. Reference RLOC 03622-3605 through 3629.

For HE-41, one unirradiated fuel rod (E-5) was removed and replaced with a high enrichment rod.

Modification to irradiated assembly HE-41:

Reconstitution efforts during June 1974 included removal of the high enrichment rod from HE-41 for subsequent shipment offsite. Reference RLOC 03614-4098 to 4111.

Status Summary

SNM:

The SNM quantity in HE-41 was initially increased (by replacement of one of its rods with a higher enrichment rod) and has been reduced by the subsequent removal of the high enrichment rod (E-5). For specific SNM quantities for the removed rod and its replacement high enrichment rod, reference RLOC 03622-0635 & 0636.

Modification: None.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 22.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

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Assembly: HE-41

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Transfer and							-		Handling Notes:	urnup (Refere 254)	ate (Reference	Fuel Type: GE Type III	Assembly: HE-41
2							-			nce Record Lo	e Record Locat	Type III	Ξ.
										Burnup (Reference Record Location): 13809.22 (RLOC 05775-2966 through 3254)	Date (Reference Record Location) of Fuel Receipt: 3/16/70 (RLOC 03612-2174)		
4	•									22 (RLOC 057	ceipt: 3/16/70		
5.112211					Rod Removed.				1	75-2966 throug	(RLOC 03612-:		
6		-								.	2174)		

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FUEL CONDITION REPORT

Assembly

HE-42

Receipt & New Fuel (Unirradiated) Storage

Received on 3/16/70 (RLOC 03612-2174 to 2186 – HE-42 info found on 03612-2179) New Fuel Storage Vault Space 3N 3/17/70 to 4/20/70 RLOC 03612-1047 to 1056.

Active Nuclear Service and Discharge

Cycle 6	Core Location 60-13
Cycle 7	Core Location 59-07
Cycle 8	Core Location 64-11
Cycle 9	Core Location 64-11
Cycle 10	Core Location 64-09

5/9/70-6/5/71RLOC 03612-14218/26/71-8/25/72RLOC 03612-142010/6/72-9/1/73RLOC 03612-141910/2/73-10/30/74RLOC 03612-141810/27/74-5/30/75RLOC 03612-1416

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Discharged 6/26/75.

Irradiated Storage

SFP Location 70-07, "Final Status after Refueling 7/75", RLOC 03612-1157. Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895. 1 1 52

SFP Location 67-09, 12/2/84, RLOC 03633-2898.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

03633-2938. SFP Location 67-08, 7/27/87, RLOC 03633-2937.

Bundle remained in this SFP location through SFP survey map dated 5/12/00. SFP Location 67-16, 3/1/01.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

Modification to unirradiated assembly HE-42:

GE indicated a desire to install removable rod bundles for their testing of high performance fuel rods and control rod surveillance rods. The description of the testing is provided in a letter dated March 3, 1970, reference RLOC 00145-3488 through 3490.

The results of installation of the test rods is documented in a letter dated May 21, 1970, reference RLOC 03622-0635 & 0636. This letter provides serial numbers and isotopic

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FUEL CONDITION REPORT

data for the thirteen rods that were removed to accommodate the control rod surveillance rods and the four high performance rods.

The thirteen rods were never irradiated. The rods were shipped from HBPP to GE in September 1982. Reference RLOC 03622-3605 through 3629.

For HE-42, one unirradiated fuel rod was removed and replaced with a high enrichment rod.

No modification work was done to irradiated assembly HE-42. The assembly retains all of its rods, including the high enrichment rod installed in position E-5.

Status Summary

SNM:

The SNM quantity in HE-42 was initially increased prior to irradiation by replacement of one of its rods with a higher enrichment rod. No additional modification to the assembly SNM has been performed. HE-42 retains its high enrichment rod at position E-5. For specific SNM quantities for the removed rod and its replacement high enrichment rod, reference RLOC 03622-0635 & 0636.

Modification: None.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 20.

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MODIFIED ASSEMBLY MAP

Assembly: HE-42

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		C	5D:::::*:::::::::::::::::::::::::::::::	E5(525222		Handling Notes:	Burnup (Reference Record Location): 16196.93 (RLOC 05775-2966 through 3254)	Date (Reference Record Location) of Fuel Receipt: 3/16/70 (RLOC 03612-2174)	Fuel Type: GE Type III
							ation): 16196.93 (RLOC 057	m) of Fuel Receipt: 3/16/70	
No. 199			· · · · · · · · · · · · · · · · · · ·	5.5 w/o rod.	·	·	75-2966 through	(RLOC 03612-217	
6						· · · ·		'4)	

FUEL CONDITION REPORT

Assembly

HE-43

Receipt & New Fuel (Unirradiated) Storage

Received on 3/16/70 (RLOC 03612-2174 to 2186 – HE-43 info found on 03612-2177) New Fuel Storage Vault Space 2N 3/17/70 to 4/20/70 RLOC 03612-1047 to 1056.

Active Nuclear Service and Discharge

Cycle 6	Core Location 63-05	5/9/70-6/5/71	RLOC 03612-1421
Cycle 7	Core Location 57-06	8/26/71-8/25/72	RLOC 03612-1420

Discharged 9/4/72.

Irradiated Storage

SFP Location 54-07, 10/27/72, RLOC 03612-1170.

Bundle remained in this SFP location through SFP survey map dated 2/16/73, RLOC 03612-1169.

SFP Location 53-10, 4/26/73, RLOC 03612-1167.

Bundle remained in this SFP location through SFP survey map dated 11/13/73, RLOC 03612-1164.

SFP Location 53-16, "Following January 11, 1974 Fuel movements.", RLOC 03612-1163.

Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895.

SFP Location 50-16, 12/2/84, RLOC 03633-2898.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 50-15, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

Modification to unirradiated assembly HE-43:

GE indicated a desire to install removable rod bundles for their testing of high performance fuel rods and control rod surveillance rods. The description of the testing is provided in a letter dated March 3, 1970, reference RLOC 00145-3488 through 3490.

FUEL CONDITION REPORT

The results of installation of the test rods is documented in a letter dated May 21, 1970, reference RLOC 03622-0635 & 0636. This letter provides serial numbers and isotopic data for the thirteen rods that were removed to accommodate the control rod surveillance rods and the four high performance rods.

The thirteen rods were never irradiated. The rods were shipped from HBPP to GE in September 1982. Reference RLOC 03622-3605 through 3629.

For HE-43, one unirradiated fuel rod was removed and replaced with a high enrichment rod.

Modification to irradiated assembly HE-43:

During the GE visit of April 1973 (Reference RLOC 03614-4113 through 4131) the HE-43 bundle was manipulated and rods removed. The report contains the following discussion concerning HE-43 (RLOC 03614-4115 & 4116):

"Disassembly of bundle HE-43 has been previously attempted 1971 without success. In anticipation of similar disassembly problems a special sling was installed on the bundle as insurance for later handling of the bundle should it become necessary to abort the disassembly. Fortunately the upper tie plate did come off after five (5) of the eight (8) tie rods upper end plug studs were sheared off at the base of the nuts. However eight (8) rods were stuck in the upper tie plate. Six (6) of the eight (8) were under the tie plate's blind holes. (rod locations A-1, F-1, A-6, F-6, B-5, and E-2) The other rod locations were B-6 and F-2. The preselected fuel rods were removed from the bundle by raising the upper tie plate up and over to one side together with the stuck rods. This gave just enough access to the desired rods for their removal (see attached matrix sheet for summary of bundle status).

Dummy tie rods were reinserted into locations F-4 and D-6 for structural stability. The bundle is held together by five (5) rods at locations D-1, F-4, D-6, C-6 and A-4. Bundle HE-43 was removed from the elevator and bundle HE-6 installed."

Note that the matrix for HE-43 is found on RLOC 03614-4121, and shows rods F-3 and high enrichment rod E-5 (with their respective serial numbers) as removed and further indicates the rod in position D-6 was moved to position E-5, and finally two dummy tie rods were installed in positions F-3 and D-6. The matrix also indicates rods C-1, A-3, and F-4 have sheared end plug studs and F-6 is an 'obvious failure'.

FUEL CONDITION REPORT

Status Summary

SNM:

The SNM quantity in HE-43 has been reduced by the removal of two of its rods. For specific SNM quantities for these two removed rods, reference RLOC 03622-0635 & 0636.

Modification:

Two dummy tie rods have been installed in positions F-3 and D-6. The fuel rod originally in position D-6 has been moved to position E-5. Rods C-1, A-3, and F-4 have sheared end plug studs. Rod F-6 is an 'obvious failure'.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 01.

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MODIFIED ASSEMBLY MAP

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Assembly: HE-43

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N CHICKLEY			Upper end plug stud sheared off.	;		· · ·			Handling Notes:	Burnup (Reference Record Location): 10631.30 (RLOC 05775-2966 through 3254)	Date (Reference Record Location) of Fuel Receipt: 3/16/70 (RLOC 03612-2174)	Fuel Type: GE Type III	Assembly: HE-43
Days!					· · · ·				Notes:	teferen	erence	:: GE T	
LI SAL			; ·							ce Re	Reco	ype III	ū
1-21-21										cord L	rd Loc	•	
	Upper end					Dummy tie				003	atio		
	plug stud sheared off.				•	rod.				tion): 1	n) of F		
				· 문화 및 문화 :			-			10631.	uel Re		
1						Upper end plug stud			ĩ	30 (RL	eipt:		
	,		•			sheared off.	1			Ö	3/16		
		· .•		• • •					-	0577	5/70 (
				• •		· .		5	۰. •	75-296	RLOC		
	· · · · · · · · · · · · · · · · · · ·				· ·	,	·	. •)6 thr	; 036		
									4	gno	12-2		
1111 L				Dummy tie rod.		Notes indicate an		:		7	2174)		
12070						obvious rod failure.				•			
3			· ·	· ·							:		

FUEL CONDITION REPORT

Assembly

HE-44

Receipt & New Fuel (Unirradiated) Storage

Received on 3/16/70 (RLOC 03612-2174 to 2186 – HE-44 info found on 03612-2177) New Fuel Storage Vault Space 2Q 3/17/70 to 4/20/70 RLOC 03612-1047 to 1056.

Active Nuclear Service and Discharge

Cycle 6	Core Location 55-02	5/9/70-6/5/71	RLOC 03612-1421
Cycle 7	Core Location 56-08	8/26/71-8/25/72	RLOC 03612-1420
Cycle 8	Core Location 57-01	10/6/72-9/1/73	RLOC 03612-1419
Cycle 9	Core Location 51-04	10/2/73-10/30/74	RLOC 03612-1418
Cycle 10	Core Location 51-06	10/27/74-5/30/75	RLOC 03612-1416

Discharged 6/12/75.

Irradiated Storage

SFP Location 66-12, "Final Status after Refueling 7/75", RLOC 03612-1157. Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895.

SFP Location 63-03, 12/2/84, RLOC 03633-2898.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 63-02, 7/27/87, RLOC 03633-2937.

Bundle remained in this SFP location through SFP survey map dated 5/12/00. SFP Location 62-11, 3/1/01.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

Modification to unirradiated assembly HE-44:

GE indicated a desire to install removable rod bundles for their testing of high performance fuel rods and control rod surveillance rods. The description of the testing is provided in a letter dated March 3, 1970, reference RLOC 00145-3488 through 3490.

The results of installation of the test rods is documented in a letter dated May 21, 1970, reference RLOC 03622-0635 & 0636. This letter provides serial numbers and isotopic

FUEL CONDITION REPORT

data for the thirteen rods that were removed to accommodate the control rod surveillance rods and the four high performance rods.

The thirteen rods were never irradiated. The rods were shipped from HBPP to GE in September 1982. Reference RLOC 03622-3605 through 3629.

For HE-44, one unirradiated fuel rod was removed and replaced with a high enrichment rod.

Modification to irradiated assembly HE-44:

No modification to the irradiated HE-44 assembly was performed. HE-44 retains its single high enrichment rod, at position E-5.

Status Summary

SNM:

The SNM quantity in HE-44 has been increased by the exchange of one of its rods for a high enrichment rod.

Modification: None.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 14.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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MODIFIED ASSEMBLY MAP

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Assembly: HE-44

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The States								Handling Notes:	urnup (Referer 254))ate (Reference	Fuel Type: GE Type III	Assembly: HE-44
									nce Record Lo	e Record Locat	Type III	4
WERE CO									Burnup (Reference Record Location): 17168.62 (RLOC 05775-2966 through 3254)	Date (Reference Record Location) of Fuel Receipt: 3/16/70 (RLOC 03612-2174)		
A NUMBER									32 (RLOC 057)	ceipt: 3/16/70 (
5 Bankar					5.5 w/o rod.			4	75-2966 throug	(RLOC 03612-:		
REALING REALING SUMMER WERE STREET									<u>-</u>	2174)		

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FUEL CONDITION REPORT

Assembly

HE-01

Receipt & New Fuel (Unirradiated) Storage

Received on 3/4/70 (RLOC 03612-2162 to 2173 – HE-01 info found on 03612-2167 & 2170)

New Fuel Storage Vault Space 4G 3/4/70 to 3/26/70 RLOC 03612-1054 to 1057.

SFP Location 66-05, 3/28/70 through 4/10/70, RLOC 03612-1317 & 1318.

Active Nuclear Service and Discharge

Cycle 6	Core Location 55-06	5/9/70-6/5/71	RLOC 03612-1421
Diacherrad	C140174		ала (р. 1916) 1917 — Прила Прила (р. 1916) 1917 — Прила (р. 1916)

Discharged 6/19/71.

Irradiated Storage

SFP Location 59-07, 9/21/71, RLOC 03612-1212.

Bundle remained in this SFP location through SFP survey map dated 1/24/72, RLOC 03612-1210.

HE-01 shown in channel stripper on SFP map dated 2/24/72, RLOC 03612-1209. SFP Location 59-07, 2/25/72, RLOC 03612-1208.

HE-01 shown in channel stripper on SFP map dated 2/26/72, RLOC 03612-1207. SFP Location 60-01, 2/28/72, RLOC 03612-1206.

Bundle remained in this SFP location through SFP survey map dated 3/8/72, RLOC 03612-1196.

HE-01 shown in channel stripper on SFP map dated 3/9/72, RLOC 03612-1195. SFP Location 60-01, 3/10/72, RLOC 03612-1194.

Bundle remained in this SFP location through SFP survey map dated 3/15/72, RLOC 03612-1191.

SFP Location 53-01, 3/20/72, RLOC 03612-1190.

SFP Location 60-01, 3/21/72, RLOC 03612-1188.

Bundle remained in this SFP location through SFP survey map dated 3/24/72, RLOC 03612-1183.

SFP Location 55-16, 5/4/72, RLOC 03612-1180.

Bundle remained in this SFP location through SFP survey map dated 7/20/84, RLOC 03633-2895.

SFP Location 54-15, 12/2/84, RLOC 03633-2898.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 54-14, 7/27/87, RLOC 03633-2937.

FUEL CONDITION REPORT

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

HE-01 was inspected during the period 2/22 to 3/10/72. RLOC 03615-1299; 03615-1302; RLOC 03614-4263 to 4266. The inspection notes that three rods appear to be failed, based on U/T.

Assembly was subject to reconstitution activities during the period 3/20-3/23/72. RLOC 03615-1297-1312.

A map of the final status of reconstituted assemblies is provided on RLOC 03612-1181 & 1182. HE-01 has its full complement of fuel rods. The following rod positions have non-original rods: A-3, A-4, C-1, D-1, E-3, E-5, F-3, & F-4.

The reconstitution procedure used for this work is documented in RLOC 03614-4242 to 4250.

Status Summary

SNM:

Reconstitution activities resulted in a net SNM change of -43 grams U.

Modification: None.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 08.

FUEL CONDITION REPORT

Assembly

HE-04

Receipt & New Fuel (Unirradiated) Storage

Received on 3/4/70 (RLOC 03612-2162 to 2173 – HE-04 info found on 03612-2167 & 2171) New Fuel Storage Vault Space 4C 3/4/70 to 3/26/70 RLOC 03612-1054 to

1057.

SFP Location 70-05, 3/28/70 through 4/10/70, RLOC 03612-1317 & 1318.

Active Nuclear Service and Discharge

 Cycle 6
 Core Location 56-12
 5/9/70-6/5/71
 RLOC 03612-1421

 SFP Location 59-09, 9/21/71, RLOC 03612-1212.
 SFP Location 59-09, 9/21/71, RLOC 03612-1212.
 SFP Location 59-09, 9/21/71, RLOC 03612-1212.

Bundle remained in this SFP location through SFP survey map dated 2/26/72, RLOC 03612-1207.

HE-04 shown in channel stripper on SFP map dated 2/28/72, RLOC 03612-1206. SFP Location 60-02, 2/29/72, RLOC 03612-1205.

Bundle remained in this SFP location through SFP survey map dated 6/9/72, RLOC 03612-1171.

Cycle 8	Core Location 64-09	10/6/72-9/1/73	RLOC 03612-1419
Cycle 9	Core Location 60-10	10/2/73-10/30/74	RLOC 03612-1418
Cycle 10	Core Location 58-10	10/27/74-5/30/75	RLOC 03612-1416
Cycle 11	Core Location 60-09	7/8/75-7/2/76	RLOC 03612-1415

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Discharged 7/18/76.

Irradiated Storage

SFP Location 11, 8/12/76, RLOC 03612-1154. Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC

03633-2938.

SFP Location 65-16, 7/27/87, RLOC 03633-2937.

Bundle remained in this SFP location through SFP survey map dated 5/12/00. SFP Location 71-10, 3/1/01.

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

FUEL CONDITION REPORT

HE-04 was inspected during the period 2/22 to 3/10/72. RLOC 03615-1299; 03615-1302; RLOC 03614-4269 to 4271. The inspection notes that two rods appear to be failed, based on U/T.

Assembly was subject to reconstitution activities during the period 3/20-3/23/72. RLOC 03615-1297-1312.

A map of the final status of reconstituted assemblies is provided on RLOC 03612-1181 & 1182. HE-04 has its full complement of fuel rods. The following rod positions have non-original rods: A-3, C-6, D-6, F-3, & F-4.

The reconstitution procedure used for this work is documented in RLOC 03614-4242 to 4250.

Status Summary

SNM:

Reconstitution activities resulted in a net SNM change of +56 grams U.

Modification: None.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 24.

The 1/24/05 video inspection record accurately corresponds to the assembly configuration described in this record.

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FUEL CONDITION REPORT

Assembly

HE-24

Receipt & New Fuel (Unirradiated) Storage

Received on 3/16/70 (RLOC 03612-2174 to 2186 – HE-24 info found on 03612-2177) New Fuel Storage Vault Space 2B 3/17/70 to 3/26/70 RLOC 03612-1054 to 1056.

Active Nuclear Service and Discharge

 Cycle 6
 Core Location 56-10
 5/9/70-6/5/71
 RLOC 03612-1421

 SFP Location 59-08, 9/21/71, RLOC 03612-1212.
 RLOC 03612-1421
 RLOC 03612-1421

Bundle remained in this SFP location through SFP survey map dated 2/29/72, RLOC 03612-1205.

SFP Location 60-04, 3/1/72, RLOC 03612-1204.

Bundle remained in this SFP location through SFP survey map dated 3/9/72, RLOC 03612-1195.

HE-24 shown in channel stripper on SFP map dated 3/10/72, RLOC 03612-1194. SFP Location 60-04, 3/11/72, RLOC 03612-1193.

Bundle remained in this SFP location through SFP survey map dated 6/9/72, RLOC 03612-1171.

Cycle 8	Core Location 51-06	10/6/72-9/1/73	RLOC 03612-1419
Cycle 9	Core Location 55-05	10/2/73-10/30/74	RLOC 03612-1418

Discharged 11/6/74.

Irradiated Storage

SFP Location 69-05, 1/9/75, RLOC 03612-1159.

SFP Location 70-03, 6/75, RLOC 03612-1158.

Bundle remained in this SFP location through SFP survey map dated 8/3/83, RLOC 03612-1145.

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SFP Location 19, 2/23/84, RLOC 03633-2897.

Bundle remained in this SFP location through SFP survey map dated 7/30/86, RLOC 03633-2938.

SFP Location 20, 7/27/87, RLOC 03633-2937.

Bundle remains in this SFP location through map dated 12/27/04.

FUEL CONDITION REPORT

Reconstitution/Modification Activities

HE-24 was inspected during the period 2/22 to 3/10/72. RLOC 03615-1299; 03615-1302; RLOC 03614-4276 to 4278. The inspection notes that two rods appear to be failed, based on U/T.

Assembly was subject to reconstitution activities during the period 3/20-3/23/72. RLOC 03615-1297-1312.

A map of the final status of reconstituted assemblies is provided on RLOC 03612-1181 & 1182. HE-24 has its full complement of fuel rods. The following rod positions have non-original rods: B-2, C-1, & D-4.

The reconstitution procedure used for this work is documented in RLOC 03614-4242 to 4250.

Status Summary

SNM:

Reconstitution activities resulted in a net SNM change of -13 grams U.

Modification: None.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 28.

FUEL CONDITION REPORT

Assembly

HD-07 Receipt & New Fuel (Unirradiated) Storage

Received on 12/12/68 (RLOC 03612-2079 to 2098 – HD-07 info found on 03612-2092 & 2093) New Fuel Storage Vault Space 4K 12/16/68 to 12/31/68 RLOC 03612-1061

 New Fuel Storage Vault Space 4K
 12/16/68 to 12/31/68
 RLOC 03612-1061

 to 1065.
 1065.
 1065.
 1065.

Active Nuclear Service and Discharge

 Cycle 5
 Core Location 53-03
 7/20/69-4/17/70
 RLOC 03612-1422

 Cycle 6
 Core Location 55-07
 5/9/70-6/5/71
 RLOC 03612-1421

 SFP Location 62-09, 9/21/71, RLOC 03612-1212,
 SF2
 SF2

Bundle remained in this SFP location through SFP survey map dated 3/6/72, RLOC 03612-1199.

HD-07 shown in channel stripper on SFP map dated 3/7/72, RLOC 03612-1197. SFP Location 61-01, 3/8/72, RLOC 03612-1196.

Bundle remained in this SFP location through SFP survey map dated 3/20/72, RLOC 03612-1190.

SFP Location 52-01, 3/21/72, RLOC 03612-1188.

SFP Location 61-01, 3/22/72, RLOC 03612-1186.

Bundle remained in this SFP location through SFP survey map dated 6/9/72, RLOC 03612-1171.

Cycle 8	Core Location 60-10	10/6/72-9/1/73	ŕF	RLOC 03612-1419
Cycle 9	Core Location 61-01	10/2/73-10/30/74	F	RLOC 03612-1418

Discharged 11/8/74.

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Irradiated Storage

SFP Location 63-09, 7/27/87, RLOC 03633-2937 – NOTE: Assembly is erroneously noted as UD-7.

SFP Location 63-09, 7/18/88 – RLOC 04001-4143 – NOTE: Assembly is correctly labeled on this and all subsequent pool maps.

Bundle remains in this SFP location through map dated 12/27/04.

FUEL CONDITION REPORT

Reconstitution/Modification Activities

HD-07 was inspected during the period 2/22 to 3/10/72. RLOC 03615-1299; 03615-1306; RLOC 03614-4260 to 4262. The inspection notes that rod F-3 has no upper end plug and two rods appear to be failed, based on U/T.

Assembly HD-07 was subject to reconstitution activities during the period 3/20-3/23/72. RLOC 03615-1297-1312.

A map of the final status of reconstituted assemblies is provided on RLOC 03612-1181 & 1182. The following rods are not original to assembly HD-07: D-3, F-1, F-3, F-4, & F-6.

The reconstitution procedure used for this work is documented in RLOC 03614-4242 to 4250.

Status Summary

SNM:

Reconstitution activities resulted in a net SNM change of +47 grams U.

Modification: None.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 15.

FUEL CONDITION REPORT

Assembly

HD-16

Receipt & New Fuel (Unirradiated) Storage

Received on 12/17/68 (RLOC 03612-2109 to 2114 – HD-16 info found on 03612-2112) New Fuel Storage Vault Space 3C 12/18/68 to 12/31/68 RLOC 03612-1061 to 1064.

Active Nuclear Service and Discharge

· · ·			at a set of the second second second second second
Cycle 5 Cycle 6	Core Location 62-12 Core Location 60-08		RLOC 03612-1422 RLOC 03612-1421
	n 61-07, 9/21/71, RLOC 0		11200 030 12-1421
Bundle rema	ined in this SFP location t		nap dated 3/7/72, RLOC
03612-1197.		ED mon datad 2/9/72	PLOC 02612 1106
	n in channel stripper on S n 61-02, 3/9/72, RLOC 03		, RLOC 03012-1190.
	ined in this SFP location t		hap dated 3/20/72, RLOC
03612-1100			
HD-16 show	n in channel stripper on S n 61-02, 3/22/72, RLOC 0		2, RLOC 03612-1188.
	ined in this SFP location t		nap dated 6/9/72. RLOC
03612-1171.			······································
Cycle 8	Core Location 55-05	10/6/72-9/1/73	RLOC 03612-1419
		And a self	
Discharged §	9/15/73.		· · · ·
Irradiated S	torage	entere a l'activitation de la companya	e e e e e e e e e e e e e e e e e e e
SEP Location	n 61-06, 11/13/73, RLOC	03612-1164	r · · · · · · · · · · · · · · · · · · ·
SFP Location	n 62-15, "Following Janua	rv 11, 1974 Fuel mov	ements", RLOC 03612-
1163.			•
Bundle rema	ined in this SFP location f	hrough SFP survey n	nap dated 8/14/75, RLOC
03612-1156.			
	n 71-08, 8/12/76, RLOC 0		
		through SFP survey n	nap dated 7/20/84, RLOC
03633-2895.		2622 2000	
	n 68-16, 12/2/84, RLOC 0		nap dated 7/30/86, RLOC
		intough orr survey h	nap dated 1100/00, NLOO

03633-2938.

SFP Location 68-15, 7/27/87, RLOC 03633-2937.

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FUEL CONDITION REPORT

Bundle remains in this SFP location through map dated 12/27/04.

Reconstitution/Modification Activities

HD-16 was inspected during the period 2/22 to 3/10/72. RLOC 03615-1299; 03615-1306; RLOC 03614-4238 to 4240. The inspection notes that rod B-5 has been dropped and one rod appears to be failed, based on U/T.

Assembly was subject to reconstitution activities during the period 3/20-3/23/72. RLOC 03615-1297-1312.

A map of the final status of reconstituted assemblies is provided on RLOC 03612-1181 & 1182. The following rods are not original to assembly HD-16: B-5, C-6, F-3, & F-4.

The reconstitution procedure used for this work is documented in RLOC 03614-4242 to 4250.

Status Summary

SNM:

Reconstitution activities resulted in a net SNM change of -13 grams U.

Modification: None.

January 24, 2005 Video Inspection Record

The video inspection record is found on a DVD labeled 'HBPP SFP 1/24/05'. The Chapter that is applicable to this assembly bundle is Chapter 21.

REVIEW & APPROVAL

Prepared by <u>\S\ James B. Neale</u>

Date 05 / 18 / 2005

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Reviewed by <u>\S\</u> Greg Bierbaum _____ Date <u>05 / 18 / 2005</u>

Approved: <u>\S\ Bruce Norton</u> Date <u>05 / 18 / 2005</u> Project Manager