National Spent Nuclear Fuel Program Semi-Annual Meeting

July 11-12, 2006

Crystal Gateway Marriott
1700 Jefferson Davis Highway
Arlington, Virginia

Meeting Summary

Written and Compiled by
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NATIONAL SPENT NUCLEAR FUEL PROGRAM MEETING

JULY 11-12, 2006

CRYSTAL GATEWAY MARRIOTT

ARLINGTON, VIRGINIA

AGENDA

Tuesday, July 11

8:30	Introductions	Mark Arenaz, NSNFP
8:40	Welcome and EM SNF/HLW, DOE HQ Organization	Mark Frei, EM
9:00	Repository Program Update • Organization • Lead lab / Yucca Mountain, division of activities • Status of License Application • MOA Status	Steve Gomberg, RW
10:00	Break	
10:30	National Spent Nuclear Fuel Program Direction FY-2006-2007 Work Activities	Phil Wheatley, NSNFP
11:30	Total System Model Interaction with NSNFP	Eric Coryell, BSC
12:05	Advanced Neutron Absorber Update	Bill Hurt, NSNFP
12:30	Lunch	
	Site HLW Progress/Activities	
1:30	Hanford	Sen Moy, DOE-RL
2:00	SRS	Tom Gutmann, DOE-SR
2:30	INL	Jan Hangers DOE-ID
3:00	INL-MFC	Mike Goff, INL
3:30	Break	
	Site SNF Progress/Activities	
3:45	Hanford	Sen Moy, DOE-RL
4:15	SRS	Scott Declue, DOE-SR
4:45	INL	Ron Ramsey, DOE-ID
5:15	Adjourn	

Wednesday, July 12

8:00	Opening Remarks	Mark Arenaz, NSNFP
8:05	Update on DOE SNF Transportation Approach	Tom Hill, NSNFP
8:50	Quality Assurance, EM Oversight	Don Armour, EM
9:05	Quality Assurance • Planned QARD Revisions • WCQARS	Rom Murthy, RW
9:15	Repository Criticality Approach • Preclosure • Postclosure	Henry Loo, NSNFP
9:40	Break	
10:00	ID-SR SNF Swap	Bill Hurt
10:15	Status of Decision on H-Canyon Operations	Sachiko McAlhany, DOE-SR
10:45	Integrated Acceptance Schedule • Report of Results • Discussion of Assumptions • Modification and Update • Modeling Application	Mark Arenaz Bill Hurt
11:30	Meeting Summary/Actions	Mark Arenaz
12:00	Adjourn	

ATTENDEES

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ACTIONS

#	Action Item	Designee	Due Date
1	Draft a request for Frank Marcinowski that DOE-SNF be considered for the Initial Handling Facility (IHF) at Yucca Mountain. Send to Dick Blaney.	NSNFP	7/26/06
2	EM/NSNFP invitation to the RW Design Review meeting (end of July/1st of August)	Dick Blaney / Marcinowski	7/21/06
3	Provide a list of the SNFs that require poisons to Dick Blaney. Henry Loo will update the table.	NSNFP / Henry Loo	7/19/06
4	Send a copy of the Cost Report on Calcine Treatment to Dick Blaney.	Jan Hagers	Complete
5	Obtain the ROM estimates on Cs and Sr options (2 paths) and provide them to Dennis Koutsandreas.	Sen Moy	7/21/06
6	Confirm the results of the CWI evaluation of the DOE Standardized Canister. Send results to Dick Blaney.	John Collins	7/26/06
7	Provide the NRC June 1st meeting notes to Ron Ramsey.	NSNFP	7/19/06
8	Consider the impact on the Topical Report for moderator exclusion for the DOE Standardized Canister relative to the decision to reprocess Al Fuel. (White Paper)	NSNFP to Dick Blaney	8/4/06
9	Update the LA criticality matrix that was provided previously by BSC. Send to NSNFP.	Steve Clark	7/29/06
10	SRS / INL Swap information to Charlie Anderson. 1. Can INL Implement the fuel swap by 2019? 2. Sufficient storage capacity at SRS and INL? 3. Does this meeting the Idaho Settlement Agreement? 4. Transportation Issues? 5. How difficult will it be for the INL to initiate or implement contract modifications? 6. Are there sufficient resources available at the INL and SRS? 7. What are the political issues that need to be considered? 8. Ensure NEPA is covered. 9. Develop fuel swap plan through 2019.	Dick Blaney Ron Ramsey Scotty DeClue	7/19/06
11	Complete the IAS Total System Model with current assumptions.	NSNFP	10/01/06

MEETING SUMMARY

(Asterisk (*) indicates a presentation material, which will be available after August 1, 2006 on the NSNFP Website, http://NSNFP.INEL.Gov/Program/)

Welcome/Introductions

Mark Arenaz, NSNFP, DOE

Mark Arenaz welcomed the participants and initiated introductions.

EM SNF/HLW, DOE HQ Organization

Mark Frei, DOE-EM

EM has disposition decisions to make for the INL and SRS, as well as implementing the opening of Yucca Mountain.

The Program Planning and Budget office has responsibility for budget and congressional interaction. The new office of Program Integration has responsibility for disposition of SNM, Plutonium, and Uranium as well as SNF. This includes disposition strategy and management oversight.

Frank Marcinowski has responsibility for HLW and thus the interface with RW. The Program Integration office will work together with HLW and RW to resolve treatment, storage, and repository acceptance issues.

The focus of the EM Program is to continue to build on closure site success. They intend to close 9 more sites by the end of this year, including three NNSA sites, one Office of Science, and five EM sites. Closure priorities are risk based in the following order:

1. Minimum Safe Operations
2. Radioactive Tank Waste
3. Disposition of SNF
4. Disposition of Solid Waste
5. Disposition of SNM
6. Remediation of Ground Water
7. D&D of Facilities.

The budget is not sufficient to complete all the priorities. The request this year is $5.8 B. The 5-year plan submitted to Congress has $5.2 B in 2008, then below $5 billion in 2009 and beyond. But EM requires about $6 B a year to just to be compliant.

Funding requirements and life cycle costs are rising. EM's issues include Hanford's waste treatment plant, recent litigation, buried TRU waste, new scope such as MOAB cleanup identified next year, LANL consent order, material consolidation, etc. EM is looking at ways to be efficient and creative.

The NSNFP's focus is to support the needs of the sites to disposition SNF and to support the opening of Yucca by working proactively with both parties.

Q: What is your perspective on the pending decision for SRS H-Canyon continued operations?
A: It is likely that H-Canyon will operate for several years.

Q: Were the roles and responsibilities clearly defined after the reorganization?
A: Yes, my group, Program Integration (Mark Frei) is responsible for SNF and Christine Gelles is the point of contact responsible for HLW. Both groups will work closely to integrate their actions, but the responsibilities are separately defined.

Q: Who owns excess plutonium?
A: If it is still a material, it is in Program Integration. If it is considered a waste, it falls under Marcinowski.

Q: When will the AMs and EMs get back together to discuss HLW/SNF action items?
A: There are several pending decisions that need to occur before we have another meeting. These issues are being worked. NSNFP was sending a monthly status report, but no changes have occurred to warrant an update. The H-Canyon decision is critical. Charlie Anderson wants to do the right thing with H-Canyon. It may be next year before another meeting is scheduled.

Q: SRS is worried about the feed break for H-Canyon.
A: Talked to SRS and they seem to have a plan to mitigate this issue.

Repository Program Update*

Steve Gomberg, OCRWM

Q: NSNFP would like to revisit the Yucca Mountain Initial Handling Facility (IHF) based on their position to not accept DOE-SNF. DOE SNF and HLW are designed to be handled as disposable canisters. DOE is planning to use standardized canisters as part of their fuel acceptance.
A: Valid concern RW trying to keep the process simple.

Action 1: Draft a request for Frank Marcinowski that DOE-SNF be considered for the Initial Handling Facility (IHF) at Yucca Mountain.

Q: When is the IHF expected to be on line?
A: In T +2 years the IHF should be operational. We still need to do the acquisition strategy, which was not submitted with CD-1 package. The acquisition strategy is required for full CD-1 approval.

Q: How does commercial SNF get into a TAD?
A: The utilities will load the TADs on-site. They should have the infrastructure and systems in place. RW will have some additional capability to load TADs via the wet-handling facility. However, the CRCS will not have handling capability for bare fuel.

The License Application (LA) schedule will be formally announced at the upcoming Congressional meeting.

Q: Who will be invited to Sproat's RW Design Review meeting?
A: Check with Mark Frei and Frank Marcinowski to see who is on the invitation list. Work with them to ensure EM's involvement in this meeting the end of July.

Action 2: EM/NSNFP invitation to the RW Design Review meeting (end of July/1st of August).

Q: How will the design and fabrication of TADs be accomplished?
A: Vendors will be used to design and fabricate the TADs. Utilities will procure and load TADs at their expense. RW is looking at some financial incentives for the utilities, which generally support the simplification of the processes and operations at Yucca.

Q: Did Secretary Bodman submit legislation to change some of the Yucca Mountain requirements?
A: RW submitted legislation to Secretary Bodman to correct NWPA issues, such as RCRA non-applicability and changes to the 70,000 MTHM limit. It is not certain when it will be introduced through a sponsor and proposed for legislation. Nevada does not support the bill.

Q: GNEP looks like it will get funded. Is RW working with GNEP?
A: Alan Brownstein is one of the contacts. We are looking at doing some TSM work for GNEP; there is a lot of interfacing occurring.

Q: Are you working with GNEP on waste form specifications?
A: Yes, they have similar waste forms consistent with the AFCI UREX process. We are working closely with these groups and attend their bi-annual meetings. We want to make sure the waste forms will be acceptable.

Q: Can you comment of waste form disposal at sites other than Nevada?
A: There is a concern to off-load SNF stored at reactor sites. We work under NWPA which requires us to store SNF at a 10CFR63 facility.

Q: Is there any movement within DOE to consider an interim storage site?
A: Unsure about any specific legislation or work being done.

Q: Do you plan on updating the Total Life Cycle Cost system?

A: Yes, updates are done annually with a complete bottoms up approach every two years. We are now waiting on the design details and more definition (March 2007) before the next major update.

Q: Will you change or update the way you collect costs?
A: No, the method for collecting costs should stay the same.

National Spent Nuclear Fuel Program Direction*

Phil Wheatley, NSNFP

Component reliability is an emerging issue from RW. This will involve some qualitative analysis methodology to look at failure and reliability analysis. NSNFP did do a canister survivability study, which looked at weld flaws, base metal flaws, etc. We developed numbers that fed into the design considerations. We have planned for an update to this study on our work plan. The Navy has been in discussions with RW on this issue as well. There will be some further meetings.

Q: Will RW do a redesign of the DOE Standardized Canister? (TAD versus DOE Standardized Canister clarification.)
A: No. The TAD is 6' x 21' much like commercial dry storage canister (DSC). The inside will include a fuel storage rack. The approach is to meet with industry to identify ways to modify existing utility canisters. TADs are for commercial SNF. The DOE Standardized Canisters still go into a Waste Package at Yucca Mountain. A DOE Standardized Canister is not a TAD. Discussions involving the DOE Standardized Canister includes the Hanford MCOs. Survivability is much different for a TAD than for a DOE Standardized Canister.

Q: Is there post closure performance required for the poisons?
A: That is the reason for the analysis on the DOE Standardized Canisters. We should be able to do this with the previous work we have done. However, a non-mechanistic threat scenario (safeguards) could be a future issue with NRC qualification of the DOE Standardized Canister.

Q: When would we get feedback on threat scenarios?
A: Late summer 2006. It will be factored into the Topical Report. It may also be a separate submittal. This is a significant issue for HLW modifications at INL.

Q: What is your view on putting NRC approval of moderator exclusion on the critical path to packaging any fuel in a DOE Standardized Canister?
A: We should have the decisions needed before we package any fuel in DOE Standardized Canister. We are a couple of years away at the INL. It is not a go/no go decision. The amount of data gathered at the time of packaging is the factor. The reason for the approach on moderator exclusion is for transportation to reduce the data required on the SNF.

As we discussed this with RW, we had an industry vendor look at our documents and suggest we start taking credit for the DOE Standardized Canister. RW said we were okay to pursue this through NRC (Part 71 program) without going through RW. We procured a contract through Talsman international. Industry and Talsman have reviewed our documents and they have been supportive. However, this will be a technical and policy issue with the NRC, since it has not been done before. Commissioners will have to weigh in on the decision. NSNFP has started working on discussions with the commissioners. We have the strongest case of anyone in industry to get approval, which could take up to 24 months.

Q: What if the NRC does not approve moderator exclusion?
A: Then we gather data as we package fuel. If NRC says for a Part 71 application, we have to provide some data, we may have to do some physical exams. This is a safety issue for DOE relative to handling the bare fuel which increases risk to employees. We do want to look at ways to minimize waste inside DOE facilities to prepare this SNF for transportation.

Some fuel has been stored for 30+ years and we would have difficulty to produce a high degree of data. Fuel specific data measurements are what we are trying to avoid with the moderator exclusion report to NRC.

Q: Are you using bounding fuels?
A: Criticality calculation is the reason for all this. It is hard to do with a broad bounding fuel case and moderator. Some are more reactive with less moderator and some are less reactive. There are so many considerations.

Q: Will the weld system prototype be used on the TADs?
A: The welding and NDE System developed by the NSNFP will be used on the Yucca Mountain Waste Packages (WPs). This system is not deployable for the utilities and will not be used on the TADs.

Q: Why can't the NSNFP do design work on the Standardized Canister?
A: The NSNFP does not have an ASME Stamp, therefore can't really do design. Concepts developed by NSNFP have final design completed by a qualified vendor (e.g., Foster Wheeler's design of the DOE Standardized Canister).

Q: Who is the NSNFP POC weld engineer?
A: Denis Clark.

Q: Were MCO transportation calculations done fully moderated?
A: Calculations do not depend upon moderator exclusion. They were done using loading data and assumptions using rubblized fuel in loading baskets, which showed they were subcritical. We restricted the damage to fuel to a single basket and we kept the fuel in the basket.

Total System Model Interaction with NSNFP*

Eric Coryell, Waste Management Integration, Bechtel SAIC Company, LLC (BSC)

Q: What does "Rail service will dedicate a train" mean?
A: Using a dedicated train with nothing but SNF on it.

Q: Is emplacement in Yucca Mountain random?
A: Emplacement is a result of analysis; however, placement is not specified.

Q: RW's acceptance of utility SNF.
A: Acceptance schedule has to have enough leeway to account for commercial SNF, which will have different heat loads. This could impact the DOE-SNF transportation acceptance schedule.

- RW would like to initiate discussions with EM to provide some analysis to help the DOE sites determine impacts to difference scenarios. They have an analytical package to exam effects on the entire system. This tool can help the DOE sites.

- Issue: The old IAS is different. We need to get the right data to RW to get the optimal flow of material. Need to develop a higher fidelity IAS.

- RW can't control what fuel is shipped from the utilities. Given this, they will need certain types of fuel from DOE to assist with heat load in Yucca Mountain.

The CRD includes Revision 0 to the IAS, which is an inefficient case for RW. The TSM will help identify a better mix of waste forms. An updated IAS will be included in modifications to the CRD.

Advanced Neutron Absorber Update*

Bill Hurt, NSNFP

Issue: Industry has no experience with scrap recycling of Gadolinium.

Q: Did you look at Hafnium for intact baskets?
A: Yes, but it was very costly, so we decided to go with Gadolinium.

Q: Where does this material go?
A: The EM program funds this work for the internals of the DOE Standardized Canister. RW could make use of it inside a commercial WP.

Q: Will the materials be used in all DOE Standardized Canisters?
A: No, not all fuels require poisons.

Action 3: Provide a list of the SNFs that require poisons to Dick Blaney.

SITE HLW PROGRESS / ACTIVITIES

Hanford – Office of River Protection*

Sen Moy, DOE-RL

Sen Moy gave two presentations for the Office of River Protection (ORP); one on Hanford's HLW and Low Activity Waste (LAW) and the second on the Immobilized High Level Waste (IHLW) Interim Storage and Shipping Status.

The new schedule and new total costs are still under development. There are several unresolved issues that impact the costs.

Two buildings are on hold due to seismic issues, but the other facilities are under construction.

Savannah River Site (SRS)

Tom Gutmann, DOE-SR

Tom Gutmann presented the status of the SRS Radioactive Tank Waste Program.

The Defense Waste Facility (DWPF) has produced 2060 canisters to date. Glass Waste Storage Building (GWSB) #2 was recently completed and the opening ceremony was held yesterday. It was completed ahead of schedule and under budget.

GWSB #1 has approximately 100 storage positions left. GWSB #2 will begin receiving canisters later this year. SRS expects DWPF to produce about 230 canisters per year, a slight reduction from previous estimates.

The initial SRS HLW System Plan, Revision 0, was issued in December 1992. Since that time, this plan has been revised 13 times, with the last revision issued in December 2002. The next revision to this plan is in development and reflects a two tiered approach:

- An initial Liquid Waste Disposition Processing Plan that addresses the near term from FY-06 through FY-12 will be issued first. This plan will focus is on what needs to be done prior to the completion and startup of the Salt Waste Processing Facility (SWPF). Per this interim processing plan, certain salt waste will be processed for disposal at the onsite Saltstone Disposal Facility. Some of this salt waste will be processed using the same technology (caustic-side solvent extraction) that will be employed for the SWPF but on a much smaller scale. Other salt waste will be processed by Deliquification, Dissolution and Adjustment process.
- Salt processing via the SWPF is longer term beginning FY-11. It will be a high volume processing facility. Following startup of the SWPF, an updated version of the System Plan addressing the execution of the scope of the mission to disposition all remaining radioactive tank waste will be developed and issued.

The key issue with implementation of the Liquid Waste Disposition Processing Plan is renegotiation of the Federal Facility Agreement with the State. The State sought a formal commitment from DOE on salt waste processing. In an attempt to satisfy the State's request, DOE-SR prepared an Agreement in Principle setting forth DOE's goals for salt processing. A couple of weeks ago, Secretary Bodman declined to sign the Agreement in Principle. The path forward strategy is uncertain at this time. SRS needs an operating permit from the State to operate the Saltstone Processing Facility and Saltstone Disposal Facility to execute the Liquid Waste Disposition Processing Plan.

Further complicating matters, the interim processing plan becomes harder to implement the longer the decisions with the State remain open. Processing salt waste is key to reducing the volume of stored waste in the SRS tank farms. Presently, 36.8 million gallons of liquid waste remain in the tank farms despite the production of over 2000 glass logs at the Defense Waste Processing Facility. This is actually 2.8 million gallons more liquid waste in tank farm storage than when we started.

Operations in the SRS tank farms are hampered by the lack of available tank space. Any movement of waste for processing purposes impacts the entire tank farm system. Presently, Tank 49 has 600,000 gallons of salt waste, which needs to go to Tank 50, Tank 50 has liquid salt waste that needs to go to the Saltstone Processing Facility and Tank 41 has two batches of waste that need to follow this same path to Tank 49 and then to Tank 50. None of these movements can be initiated until we resolve issues with the State such that the necessary permits can be obtained.

An updated projection of the number of SRS HLW canisters to be produced in executing the EM mission at SRS is not available yet for the IAS. Recently, there has been speculation that there is more sludge waste in storage at SRS than previously projected and that this will lead to a significant increase in the number of HLW canisters to be produced at DWPF. This speculation raised questions regarding the basis for the previous sludge volume projections and why such previous projections could be substantially different. There is a historical perspective that may explain why:

- We know from process knowledge what has been extracted and what is in the tanks from the materials processed through the canyons (not from measurements).
- For safety purposes, prior to the startup of DWPF, a criticality analysis was performed to ensure safe operation. This criticality analysis made conservative assumptions of the amount of poisons (metals) that would be contained in the sludge where the residual fissile material resides. This analysis was then used to make canister production projections for execution of the EM mission.
- To date, four sludge batches have been processed. Contrary to the criticality analysis-based projections, each batch has generated substantially more canisters. The hard data from these sludge batches lead SRS to speculate that a much higher volume of metals reside in an insoluble form in the sludge. This data appears to support a much higher volume of sludge in the tank farms than previously projected and would consequently lead to the production of more canisters. This new information will result in new projections of canister numbers.

Q: What is the plan forward and whose action is it now to recover from the Bodman refusal to sign the MOP?
A: Terry Spears is the Assistant Manager for the Waste Disposal Project. The strategy is being reviewed to continue discussions with the State of South Carolina.

Q: What is the status of the steam reforming for Tank 48?
A: In May, DOE-SRS issued a letter to the site contractor for Tank 48 regarding the planned Aggregation Strategy. It provided direction to investigate other ways of dispositioning this material and retaining the Aggregation Strategy. In other words, don't abandon it, but investigate other options. Tank 48 is a special tank containing organics. We don't want to run organics through the tank waste system.

Idaho National Laboratory (INL)*

Jan Hagers, DOE-ID

Q: Why assume an 8 year shipping period when you don't have to have it road-ready until 2035?
A: We should be able to relax this schedule to a 15 year shipping period, which would allow for smaller facilities. We used the numbers in the contract.

Q: Was the direct vitrification plant a green facility?
A: It was priced as a new facility. Independent Cost Estimate has contingency built in to achieve 85% confidence level.

Q: What was the quality of the cost estimate?
A: The contractor had a lot of expertise and used their high-level resources. They did a good job in laying out the risk profiles and extremes for schedule and costs.

Action 4: Send a copy of the Cost Report on Calcine Treatment to Dick Blaney.

INL- Treatment of Sodium-Bonded Spend Nuclear Fuel*

Mike Goff, INL

Bob Benedict is the Program Manger for SNF Treatment Activities.

Q: What are the criticality issues with driver fuel in the Electrorefinor?
A: We are moderator limited. We can have fairly large quantities of fissile material in refiners, but it is the downstream operations that have to be considered.

Q: Is this product in the LA for Yucca Mountain?
A: The fuel is in the inventory, but it is not included in the fuels for the LA. The TRU waste treated for disposal goes into a ceramic form. It will be considered HLW, not TRU.

Q: Why was the HIP process eliminated?
A: Putting a production size HIP into the hot cell was a challenge, due to the crane limitation of 5 tons in the cell.

Q: What are your canister numbers?
A: Under 50. (Does not include the 30-tons of Fermi-blanket material.)

Q: Will you treat all the EBR-II fuel?
A: We have observed that some of the double contained EBR-II fuel shows some failures as indicated by the presence of hydrogen gas. This would be due to some moisture in the fuel canister. Not sure how the water got into the can. This fuel was removed directly from the EBR-II reactor.

Q: Does it look like Hanford will be able to ship the FFTF fuel to MFC?
A: This should be covered in the Hanford SNF presentation. They assume about 120 kg of HEU per year. They could treat as much as 250 kg a year with some additional equipment. Idaho is bound by the Settlement Agreement under the SNF guidelines; have to be out of State by 2035.

SITE SNF PROGRESS / ACTIVITIES

Hanford*

Sen Moy, DOE-RL

Q: Is there a cost comparison on the Cesium and Strontium capsules?
A: Additional analysis has been requested by the IG on options for treatment of the Cs and Sr capsules. ROM estimates are available, but they have not been published.

Action 5: Obtain the ROM estimates on Cs and Sr options (2 paths) and provide them to Dennis Koutsandreas.

Savannah River Site (SRS)*

Scott DeClue, DOE-SR

- Calculations show about 1000 assemblies can be processed per dissolver per year. Assume two dissolvers in the H-Canyon. SRS estimates they will have a total of 14,000 assemblies to process if the INL fuel swap occurs. This estimate includes FRR shipments as well.

- INL/SRS Fuel Swap Schedule: 10 shifts (5 days) to unload NAC LWT. Assume it also takes this long to load a NAC LWT. It will likely take about 30 days to complete one round of transfers between INL and SRS. These estimates assume two 12-hour shifts, 7 days a week.

- H-Canyon has only one cask handling bay. There is only enough room to handle one cask at a time. The schedule assumes 12 cask receipts per year to/from Idaho. Some months may be more, but winter months may be less than one a month. H-Canyon uses a truck well, not a pool to handle the cask. This is a remote crane operation to move the SNF from the cask to the processing area.

Q: Does the approval of CD-0/CD-1 package include the INL/SRS Fuel Swap and/or H-Canyon Operations?
A: The package includes using SNF as dissolver fuel for H-Canyon.

Q: What considerations are there for shipping stainless steel SNF to Idaho?
A: There are 19 different stainless steel fuel types. SRS likely does not have a basket to fit each fuel type.

Idaho National Laboratory (INL)*

Ron Ramsey, DOE-ID

The Foster Wheeler contract was cancelled, but DOE owns the design, the DOE Standardized Canister design, and the NRC License. DOE is pursuing two options for facility designs SNF packaging, interim storage, and shipping to Yucca Mountain. A CD-0 was submitted in April 2006 and then updated and resubmitted in June 2006.

Q: What will happen to ATR SNF after 2010 when CPP-666 is emptied?
A: The SNF inventory in CPP-666 at the end of FY-05 now belongs to EM. Additional ATR SNF added to the inventory after FY-05 belongs to NE. If FAST is needed for ATR SNF after 2012, the facility will likely be transferred to NE.

Q: Would the DOE Standardized Canister require design changes if it was loaded under water, evacuated, and then dried?
A: CWI did an evaluation of the canister and found that it would not require design changes.

Action 6: Confirm the results of the CWI evaluation of the DOE Standardized Canister. Send results to Dick Blaney.

Q: Is there space in the IFSF for all the SNF in CPP-666 up through Sept 2005?
A: The SNF belonging to EM will go into dry storage in IFSF by 2009. CPP-666 is 60% occupied and 60% of it belongs to the Navy. Moving the Navy SNF back to NRF will be a large campaign.

NSNFP / DOE ACTIVITIES

Update on DOE SNF Transportation Approach*

Tom Hill, NSNFP

Q: What is your estimate on how stainless steel fuel compares with the k_{eff} of the ATR fuel in the basket?
A: Henry Loo may have that information.

Q: Will the comments from the NRC on 'how dry is dry' be helpful to Idaho as they prepare the CD-1 package? (How to demonstrate dryness of the canister.)
A: Yes, but they did not make any definitive comments. It is not just Idaho; we need to develop a generic methodology for all the sites. We had a meeting with CWI and have maintained dialog with them. They did not provide written comments, but we developed a matrix of comments and have detailed notes.

Action 7: Provide the NRC June 1st meeting notes to Ron Ramsey.

Q: Considering the wet loading process at CWI, the repository acceptance requirements (with regards to the amount of water in the canister) may exceed the transportation requirements.
A: There is not a specific number regarding the amount of water in the canister for waste acceptance at Yucca Mountain.

Q: What is the 10CFR71 issue? What are the repository unique conditions that would apply to safeguards?
A: The issue is with safeguards and terrorist attacks. There was no in-depth discussion, but they agreed to have a follow-on meeting to discuss this further.

Q: When you issue the report to DOE, can you share it?
A: Yes, the letter will come from Mark Arenaz.

Action 8: Consider the impact on the Topical Report for moderator exclusion for the DOE Standardized Canister relative to the decision to reprocess Al Fuel. (White Paper)

Q: Is there a concern that we are asking the NRC to conduct a 2 year review of our Topical Report for moderator exclusion of our aluminum SNF after the decision to process this same fuel in the H-Canyon? Consider using a different fuel type rather than aluminum fuel.
A: Aluminum fuel is was used to do criticality calculations. The issue of the Topical Report is the DOE Standardized Canister, which is not focused on a fuel type. Also, DOE may not process all the aluminum fuel, which is part of the consideration.

Q: Is the NRC going to develop other cask designs based on security considerations? You should discuss these issues with DOE Security before the NRC meeting to get their ideas and perspectives.
A: This is outside of 10CFR71; therefore we asked for a follow on meeting to understand the other considerations that impact the request for moderator exclusions. We are expecting the meeting in mid-August.

Quality Assurance, EM Oversight*

Don Armour, NSNFP

Don Armour represented Duli C. Agarwal, EM-62 in the Quality Assurance presentation.

Q: Have you been part of the audit with NRC?
A: According to Denis Koutsandreas, the NRC was heavily involved in one of their audits and added a level of technical expertise. They were very thorough and were interested in the technical side. They emphasized the concept of risk based. Observers were a mix representing the region and HQ.

Q: Will the NRC be attending the Hanford Audit?
A: Not sure, they have some funding issues.

Q: What is the frequency of QA audits?
A: Expect annual audits. This requirement is being challenged and may be changed.

Quality Assurance

Rom Murthy, RW

QARD Rev 17 has been issued. Revision 18 will be effective October 2, 2006. It is a new baseline document that addresses 10CFR63 and NUREG 1804 guidance.

We have included the two principle new contractors, BSC and Sandia National Lab, in the QARD. They have their own QA program and will have to update their documents and be in compliance by October 2, 2006.

EM would rather work toward QARD Rev 18; therefore, the WCQARS are not effective and have been shelved for now.

DOE-EM Owned SNF Disposal Criticality

Henry Loo, NSNFP

Henry Loo represented Charlotta E. Sanders, Criticality Department, BSC, who was not able to attend the meeting.

This is a BSC presentation which is a result of a long-standing joint working team on criticality between NSNFP and BSC. The basket geometry concepts were developed from that joint team.

Q: What about HFIR and FRR fuel?
A: The bigger HFIR SNF may have to go into the 24" container. The unique ones will have to be looked at in detail to determine the basket configuration. FRR will fit into the ATR reactor basket design.

Q: Who is developing these basket concepts?
A: The basket designs originated in the criticality analysis and were perpetuated through the design concepts. Some were further developed by Foster Wheeler. The NSNFP developed the concepts, but they will be "designed" by a vendor.

Q: When you submit a topical report to the NRC for a canister, are they expecting to see a design in the topical?
A: Yes, for the DOE Standardized Canister, the NSNFP developed the concept and we have the Foster Wheeler design.

Q: Why are you moving away from the two-layer FW basket design for TRIGA SNF?
A: They used a shield plug and 2 basket layers. We did the 3-layer without a shield plug. The topical report does not have the final evaluation for the TRIGA fuel. It depends upon the path that the contractor takes. They may need a shield plug to do remote welding. This is a structural issue, but it is contractor dependent.

Action 9: Update the LA criticality matrix that was provided previously by BSC. Send to NSNFP.

INL-SRS SNF Swap*

Bill Hurt, NSNFP

The advantage of the SNF fuel swap was the opportunity to shutdown SRS as a SNF site in about 15 years. This assumes that all the INL aluminum fuel is sent to SRS to be processed in H-Canyon and the SRS stainless steel and zirconium SNF is transferred to the INL. Assumes the H-Canyon operates for at least 10 years.

The small amount of DRR that would remain in the system after H-Canyon shuts down could be shipped directly to Yucca Mountain or to the INL for packaging.

Status of the DOE Decision on SRS H-Canyon Operations

Sachiko McAlhany, DOE-SR

Congress is concerned that DOE is not moving forward on SNF and HLW issues. Charlie Anderson, DOE-HQ, has been designated the chair of the Nuclear Materials

Consolidation Committee. One of the main focal points is H-Canyon. Since the last EIS was issued, the materials identified were to be processed by the end of 2007. Approvals for additional materials for processing have not been received even though we have budgeted and planned for H-Canyon operations thru 2011.

Two Critical Decision packages have been prepared on how to proceed with nuclear materials and H-Canyon operation.

1. Plutonium Disposition
2. Enriched Uranium Project, which includes SNF and nuclear materials. This package will hopefully be approved through the ESAAB meeting on July 24th with the Deputy Secretary. Implementation of this decision requires additional NEPA. We have drafted the amended ROD in the EM office to implement processing in the H-Canyon.

Charlie Anderson will testify on July 26th to lay out the plan on nuclear materials and to discuss H-Canyon operations to ensure Congress is aware of the path forward. Charlie needs the following data before July 24th. Any issues with respect to Idaho being able to implement the fuel swap (technical, contractual and/or political) needs to be identified and included in the ESAAB briefing:

- Can Idaho implement the fuel swap within the timeframe you have planned in your H Canyon baseline
- Is there sufficient basin capacity to support the receipt of all the Zr/clad fuel
- Is transportation/transportation resources an issue
- What are contractual implications, does it change the scope of the ID spent fuel project
- Are sufficient resources available within the ID baseline to implement the fuel swap (if not when will the resources be identified and change-controlled into the ID baseline)? ID is going to be requesting CD 2/3 latter this summer, should this be included now for consistency or change controlled in at a later time?
- Are there political issues (with the BAT agreement or other) that must be overcome to execute the swap?

Action 10: Dick Blaney will send the SRS / INL Swap information to Charlie Anderson.

We want to also clarify the SRS Assumptions associated with H-Canyon operations, such as

- Minimize the amount of liquid waste generated.
- Continue to run unirradiated materials until 2008.
- Start irradiated operations with the HFIR core.
- Start the Al Clad SNF in 2009, but SRS can receive INL Al-SNF earlier.
- SRS expects to receive all the Al Clad inventory through 2019, but not after that date.
- Al Clad SNF shipments after 2019 will not be processed in H-Canyon.
- H-Canyon will take all the Al Clad SNF with no limitations.

Issue: Need to start shipping from INL by 2008 to meet the schedule. The INL/SRS fuel swap schedule needs to consider cask limitations and the Batt Settlement Agreement.

INL is not aware of any reciprocity impacts with the INL/SRS swap.

Q: What is the general strategy for H-Canyon? Will we process all the Al Clad SNF from INL and SRS or process only enough Al Clad SNF to avoid building a packaging facility at SRS?
A: The current administration's emphasis is on re-use of materials. By processing the materials, we will recover the uranium to send out to the utilities. As long as the H-Canyon is fully operational, we will continue to recover the uranium.

Q: Are there any limitations on the H-Canyon?
A: The mission is the recovery of uranium. 2019 is not a hard and fast date. We should involve NE on this issue with regards to ATR operations.

Q: During this swap, can SRS receive more than what is planned?
A: As long as we are processing and sending the uranium out, South Carolina should approve. SRS is limited on resources to physically receive the fuel. This depends upon certain years and how much FRR is coming in.

Q: Will this close out the finding identified in IG report 727?
A: Yes, we should be able to close out this item.

Q: Do we need to know specifics on shipments and numbers of casks?
A: INL thinks they could ship faster to SRS than SRS can receive. SRS would likely use the basin to store the fuel. There are other casks to consider besides the NAC-LWT cask that could be used.

Q: Does SRS have enough tank farm capacity to support this?
A: Yes, we won't be generating HLW in the next couple of years and will run this waste through the Salt Stone facility. SRS will be looking at alternative waste streams coming out of the H-Canyon in order to minimize the amount of HLW. Do we need to empty tank 48 to make this happen?

Integrated Acceptance Schedule*

Mark Arenaz / Bill Hurt

The HLW/SNF AM/EM meeting in September 2005 created several actions. One of which was to revise the current IAS developed around the 2001 timeframe.

A follow-on IAS meeting was held in San Antonio, Texas in February 2006. Some of the issues discussed include:

- Continue to keep the 1/3 - 2/3 split with SNF and HLW?

- Do we mix the canister sizes?
- Do we mix different fuels from different sites?
- How do we prioritize shipments?
- What sites should be closed?
- What are the repository opening scenarios?
- Can we process through H-Canyon?
- Waste forms not in the current LA.
- RW acceptance of casks and timeframes.
- NR impacts to schedule.

Mark reviewed base assumptions developed in San Antonio in February 2006. We plotted the base case and compared to the RW Total Systems Model. (Bill Hurt reviewed the plot.)

Q: Would you consider changing the base case assumptions consistent with the pending decisions on the H-Canyon?
A: Agree. We will also have the ability to ask RW to remove the Al Clad SNF from the repository analysis.

Action 11: Complete the IAS Total System Model with current assumptions.

Q: If SRS does issue a revised number of DWPF canisters in the near term, can we also factor in this new number to the analysis.
A: SRS has a glass production rate, which will not change regardless of the amount of glass. For the statutory case, we are tied to the 9300 canisters. It may impact the length of shipment, but not necessarily the number of shipments per year.

Issue: Short versus Long canisters. Limit in repository is the line load limit of 1.45. The longer canisters were modeled and were able to meet this max load limit. The shorter canisters exceed this limit. (Thermal heat load issue.)

The TSM effort is not just about producing a curve, but will include interface with the sites to build into the schedule.

Q: Steve Gomberg will be meeting internally with the EIS on waste streams for commercial and defense. He wants to use assumptions in the IAS. The EIS meeting has not been scheduled yet. The meeting is to give them an idea of the changes they can expect on the IAS.
A: Stay with the EIS numbers on glass and use the current IAS table from Bill Hurt.

Meeting Summary

Mark Arenaz

Mark thanked everyone for their participation. The next meeting will be scheduled in the late fall and will be announced when the date and location are finalized.

ACRONYMS

ACNW	Advisory Committee on Nuclear Waste
AFCF	Advanced Fuel Cycle Facility
AFCI	Advanced Fuel Cycle Initiative
AMR	Analysis Modeling Report
AQAR	Augmented Quality Assurance Requirements
ASME	American Society of Mechanical Engineers
ATR	Advanced Test Reactor
BBWI	Bechtel BWXT Inc.
BSC	Bechtel SAIC Company
BWR	Boiling Water Reactor
CD	Critical Decision (DOE O 413)
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHF	Canister Handling Facility (YMP)
CPT	Corporate Project Team
CSB	Canister Storage Building (SRS)
CWI	CH2M/Washington Group Idaho, LLC (ICP Contractor at INL)
DOE	U.S. Department of Energy
DTF	Dry Transfer Facility (YMP)
DWPF	Defense Waste Processing Facility (SRS glassification facility)
EIS	Environmental Impact Statement
EM	DOE Office of Environmental Management
EMT	Electrometallurgical Treatment
EPA	Environmental Protection Agency
EPRI	Electric Power Research Institute
ESAAB	Energy System Acquisition Advisory Board
FAST	Fluorinel Dissolution Process and Fuel Storage (INTEC)
FEP	Features, Events, and Processes
FFTF	Fast-Flux Test Facility (Hanford)
FHF	Fuel Handling Facility (YMP)
FRR	Foreign Research Reactor
FW	Foster Wheeler (Proposed packaging and storage facility at INL)
GNEP	Global Nuclear Energy Partnership
GROA	Geologic Repository Operating Area – Yucca Mountain. (Includes all area covered by the 10CFR63)
HFIR	High-Flux Isotope Reactor (ORNL)
HIC	High Integrity Canister (Proposed design for ‘cats & dogs’ SNF)
HLW	High Level Waste
HQ	DOE Headquarters
IAS	Integrated Acceptance Schedule
ICP	Idaho Clean-up Progect

IHF	Initial Handling Facility (Yucca Mountain)
IHLW	Immobilized High Level Waste (IHLW)
IG	Office of Inspector General
INL	Idaho National Laboratory (Was the INEEL)
INTEC	Idaho Nuclear Technology and Engineering Center
ITM	Impact Testing Machine (INL developed)
ITS	Important to Safety
ITWI	Important to Waste Isolation
LA	License Application (YMP)
LANL	Los Alamos National Laboratory
LAW	Low Activity Waste
LCC	Life Cycle Cost
LSN	Licensing Support Network
M&D	Melt & Dilute
MCO	Multipurpose Canister Overpack (Hanford)
MFC	Materials & Fuels Complex (Formerly ANL-W)
MHLW	Mixed High Level Waste
MOA	Memorandum of Agreement
MPC	Multi-Purpose Canister (SNF canister concept during mid-1990's)
MTHM	Metric Tons of Heavy Metal
MTRE	Material Test Reactor Equivalent
NAC-LWT	Nuclear Assurance Corporation-Legal Weight Truck
NDAA	National Defense Authorization Act
NEPA	National Environmental Policy Act
NFS	Nuclear Fuel Services, Inc.
NNSA	National Nuclear Security Administration
NNPP	Naval Nuclear Propulsion Program
NR	Naval Reactors
NRC	Nuclear Regulatory Commission
NSNFP	National Spent Nuclear Fuel Program
NWPA	Nuclear Waste Policy Act
OCRWM	Office of Civilian Radioactive Waste (RW) Management
OGC	Office of General Council (DOE)
ORD	Office of Repository Development (DOE)
ORP	Office of River Protection (Hanford)
PCT	Pressure Change Test
POC	Point of Contact
QARD	Quality Assurance Requirements Document
RCRA	Resource Conservation and Recovery Act
RERTR	Reduced Enrichment Research and Test Reactor
RH TRU	Remote-Handled Transuranic (waste)
RIT	Regulatory Integration Teams
ROD	Record of Decision
ROM	Rough Order of Magnitude

RW	See OCRWM
RWMC	Radioactive Waste Management Complex
SAR	Safety Analysis Report
SBW	Sodium Bearing Waste
SHADO	Small High Activity Debris Object
SNF	Spent Nuclear Fuel
SRS	Savannah River Site
SSCs	Systems, Structures, and Components
TAD	Transportation, Aging, and Disposal (Canister for commercial use)
TLCC	Total Life Cycle Cost
TQAP	Transportation Quality Assurance Plan
TRU	Transuranic Waste
TSM	Total System Model
TSPA	Total System Performance Assessment
UREX	Uranium Extraction Process
USGS	United States Geological Service
UT	Ultrasonic
WAC	Waste Acceptance Criteria
WAPS	Waste Acceptance Product Specification
WASRD	Waste Acceptance Systems Requirements Document
WBS	Work Breakdown Structure
WCQARS	Waste Custodian Quality Assurance Requirements Specification
WIPP	Waste Isolation Pilot Plant
WP	Waste Package (YMP)
WTP	Waste Treatment Plant (Proposed facility at Hanford)
YMP	Yucca Mountain Project