

Attachment 2
Facility Review Checklists

Review Form

Facility: Low Level Liquid Waste

Date of Review: February 8, 2002

Please answer the following questions after your review of the Safety Basis Flow Down Review Package (SBFDRP) for your facility:	YES	NO
1. Are there any known or suspected discrepancies between the SBFDRP and your understanding of the facility and its operations?		X
2. Are there any known or suspected hazardous materials or conditions in the facility that were not identified in the SBFDRP for that facility?		X
3. Are there any known or suspected problems with hazard identification documented in the facility's authorization basis document(s)?		X
4. Are there any known or suspected problems with the hazard categorization for the facility (including alternate methods from DOE-STD-1027-92 or inventory control)?		X
5. Are there any known or suspected discrepancies between the operations/activities described in the SBFDRP for the facility and the activities/operations occurring in or those proposed for the facility in the near term?		X
6. Are there any known or suspected problems with the hazard analyses documented in the facility's authorization basis document(s)?		X
7. Are there any known or suspected discrepancies between the current DOE approved authorization basis document(s) for the facility and the SBFDRP?		X
8. Are there any known or suspected problems with the way controls were derived from the hazard analyses and documented in the facility's authorization basis document(s)?		X
9. Are there any known significant problems with the existing authorization basis document(s) for the facility?		X
10. Are there any known or suspected problems with the TSR/OSR for the facility?	X	
11. Are there any known or suspected problems with flowing down the requirements of the TSR/OSR for the facility into operating procedures, processes, and/or programs?		X
12. Are there any known or suspected problems with the implementation of operating procedures, processes, and/or programs for the requirements of the TSR/OSR/other document containing the derived controls for the facility?		X
13. Are there any conflicts between the report for the DOE-HQ Independent Safety Basis Assessment of BJC and DOE-ORO (led by Mr. Dae Chung) and the SBFDRP for the facility?		X
14. Do you disagree with a finding or observation in the SBFDRP for the facility or was the finding or observation not comprehensive enough?		X
15. Does one or more of the findings or observations in the SBFDRP for the facility represent a significant problem that calls into question whether the facility's operations should continue?		X

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Questions (continued)	YES	NO
16. Are there any known or suspected conditions that calls into question the effective implementation of the Nuclear Criticality Safety Program for the facility? (e.g., NCSA/NCSEs address fissile material operations in the facility when needed and the NCSA/NCSE requirements are appropriately implemented; etc.)		X
17. Are there any known or suspected conditions that calls into question the effective implementation of the Fire Prevention Program for the facility? (e.g., combustible load program exists and properly implemented in the facility; hot work program exists and properly implemented in the facility; Fire Hazard Analysis (FHA) exist for the facility and accurate; FHA results brought over into the facility's accident analysis and properly implemented; fixed fire protection systems exist in facility and properly maintained [if credited in accident analysis]; etc.)		X
18. Are there any known or suspected conditions that calls into question the effective implementation of the Emergency Management Program for the facility? (e.g., Pre-Fire Plan exist for the facility; Facility-Level Emergency Plan/Procedure exist; Emergency Drill Program exists and implemented for the facility; etc.)		X
19. Are there any known or suspected conditions that calls into question the effective implementation of the Unreviewed Safety Question Program for the facility? (e.g., work control process screens for USQ implications; as-found conditions are screened for USQ implications; changes to the facility or its procedures are screened for USQ implications)		X
20. Are there any conditions that would or does require immediate implementation of compensatory measures to protect workers, public, or environment?		X

Please provide an explanation for any YES response to the questions in the Comment section below.

1. A three hour review meeting was held with the original authors of the SBFDRP (Vertical Slice-Back Page). The original SBFDRP provided to the review team lacked quality and the attachments were very difficult to follow. Following the meeting, the team concluded that the methodology and documentation supporting the SBFDRP does not contain any known or suspected discrepancies from our understanding of the facility operations.
2. During the walk down of the facility there were no additional hazardous materials or conditions noted other than those specified in the SBFDRP.
3. There were no problems found with the nuclear hazard identification documented in the facilities authorization basis. The discussions of non-nuclear hazards such as those documented during a typical ISMS program are not well discussed in the current authorization basis documents.

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4. The LLLW system is largely made up of numerous CAT II and III Nuclear Facilities. The team agrees with the Hazard Classification and experience of both the facility representative and the project manger has reviewed the classification on numerous occasions.
5. Field operational activities were observed. Based on this walk down, review of relevant documents, and previous surveillances conducted by the facility representative, no discrepancies were identified between the operational activities described in the SBFDRP and operations occurring at the facilities evaluated.
6. Calculations that support the hazard analyses were not reviewed by the team, but discussions with the authors of the SBFDRP confirmed that they did review calculations and all supporting documents identified in the facility authorization basis. Several questions were posed to the authors during the review meeting and were answered correctly along with the supporting documentation.
7. No discrepancies were denoted between the SBFDRP and the current approved authorization basis. Notebooks containing the latest authorization basis were reviewed and questions were posed to the authors of the SBFDRP and all were described correctly.
8. The authors of the SDFDRP read the entire authorization basis documents and denoted anything that could possibly be construed as a "control". These notes were then compared to the current controls in place and no additional ones were noted.
9. The authorization basis for this system is dated and is still primarily covered by a BIO OSR and a large number of USQs. However these documents are fully sufficient for the execution of the work currently happening within the system until a 10 CFR 830 compliant documented safety analysis is prepared.
10. One Finding was identified during the SBFDRP. Two TSR completed for various portions of the LLLW system do not contain an appendix for facility design features for safety as required by DOE Order 5480.22. BJC management informed the team that this correction will be made at the time of the 830 compliant SAR submittal. The team agrees with the corrective action for the finding and the schedule for submittal.
11. Flow down of OSR/TSR requirements is implemented through a database maintained by Duratek Federal Services. This database was reviewed for adequacy by the SBFDRP team and all requirements flowed down in at least one procedure and/or program and in several instances multiple times to help ensure implementation.

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12. Random checks in the control room operation were made and they appeared to be adequate during this review. In addition, the facility representative routinely assesses the operations of the LLLW system.
13. There are no conflicts between the DOE HQ Independent Safety Basis Assessment report and the SBFDRP. There was one factual accuracy found in the HQ Report stating "An FSAR was developed per DOE-STD-3009 and submitted to DOE as 10CFR830 compliant, but it was recently pulled back." The previous submittal of the FSAR was not 830 compliant.
14. The finding and observations in the SBFDRP were reviewed by the team and discussed with the authors. The team agrees with the information in the SBFDRP.
15. The LLLW system has operated safely for many years. There are no issues identified in this review that justify anything other than full operations.
16. A meeting was held with 2 members of the DNFSB on Wednesday, February 6th and the NCSO for the Low-level Liquid Waste System was reviewed in detail. Presentations were made discussing the technical basis of the NCSO and are included in the evidence file along with the attendance sheet for the meeting. Criticality is not an issue for the LLLW system.
17. No issues were identified with the Fire Protection.
18. All required Emergency Management documents were in existence and available for use. A Local Emergency Manual (orange book) exists that covers all 73 Liquid and Gaseous Waste Operations facilities.. It is updated at least annually by the Duratek Waste Disposal Supervisor and a UT-Battelle Emergency Management representative. It is kept in the Building 3130 Command Center and in the Lab Shift Superintendent's office. The Duratek Waste Disposal Supervisor has taken the web based Local Emergency Supervisor training. All 31 Duratek employees are trained members of the ORNL E-Squad, along with members from UT-Battelle, Weskem, etc. Duratek holds a quarterly table top exercise that simulates some process or emergency upset condition. They also hold an annual exercise that involves field plan in a simulated emergency. They also get emergency response field experience during callouts for the E-Squad. Additionally, they participate in lab-wide shelter in place and evacuation drills (to assembly stations) that are sponsored by the Lab Shift Superintendent. Accountability (building search) in case of emergency is assured by the Waste Disposal Supervisor, and by any personnel who are working in a facility. Entrance to operating facility buildings is by proximity badge reader, so is limited to authorized personnel. Project personnel were familiar with the Emergency Management Hazards Assessment and Emergency Action Levels for this project. They are currently involved with their review, and will issue a revision.

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19. The USQ log was reviewed and appeared to be complete. There are a large number of USQs currently active, but it appears through a rigorous configuration control program that any new requirements are being implemented as required. Both the facility representative and TRU waste program manager have participated in processing many of the USQs submittals for the LLLW system. The subcontractor USQ program appears satisfactory.
20. There were no conditions identified for the LLLW system that place workers, public, or the environment at risk. Based on this review, and several years of team experience reviewing and participating on projects involving the LLLW system it should continue full operations.

List Team Members Names below:

Gary L. Riner	TRU Waste Program Manager
Carl J. Pilj	Facility Representative
Brenda Hawks	ES&H Team Leader
Jim Landmesser	Fire Protection Engineer
John Pearson	Emergency Management

Additional Team Member Participation:

Mildreds Lopez-Ferre	Waste Operations Team Leader
Scott Foster	Safety Basis Engineer

**Review Form for
Safety Basis Flow Down Review Package (SBFDRP)
7823B, C, D LLW Storage Facilities**

1. Are there any known or suspected discrepancies between the SBFDRP and your understanding of the facility and its operations?
 - Yes
 - The USQD-OR-NM-53-0052, Rev. 0., for implementation of WD-CAL-001 Revised Category 2 Threshold Quantities for ORNL Waste Disposition Facilities, has been used as the basis for the facility categorization. This document changes the Category 2 levels by using an alternate release fraction for the four different types of waste identified in the SAR. It is not clear that DOE has performed adequate technical evaluation of this document.

2. Are there any known or suspected hazardous materials or conditions in the facility that were not identified in the SBFDRP for that facility?
 - No
 - EMHA BJC/OR-469R0 evaluated the hazards and screened out 7823 due to the low inventory.

3. Are there any known or suspected problems with hazardous identification documented in the facility's authorization basis document(s)?
 - No
 -

4. Are there any known or suspected problems with the hazardous categorization for the facility (including alternate methods from DOE-STD-1027-92 or inventory control)?
 - Yes
 - Alternate release fraction determinations have been questioned (see #1). Amounts of material in 7823B, C, D, E are well below Category 3 levels. DOTCALC, the system used to calculate and control the radionuclide inventory, is not a validated/verified system. Outstanding Occurrence report for control of percent of material less than 10 microns.

5. Are there any known or suspected discrepancies between the operations/activities described in the SBFDRP for the facility and the activities/operations occurring in or proposed for the facility in the near term?
 - No
 -

6. Are there any known or suspected problems with the hazard analyses documented in the facility's authorization basis document(s)?
 - Yes
 - Dae Chung Report: Adequacy of Hazard Categorization, The facility is assigned Hazard Category 3 without an adequate basis for that category being provided in the SAR. Adequacy of Hazard Evaluation. The hazard evaluation is inadequate. The evaluation is not in DOE-STD-3009 format. Adequacy of Controls, The overall control selection is inadequate.

7. Are there any known or suspected discrepancies between the current DOE approved authorization basis document(s) for the facility and the SBFDRP?
 - No
 -

8. Are there any known or suspected problems with the way controls were derived from the hazard analyses and documented in the facility's authorization basis document(s)?
 - Yes
 - There are four waste types defined by the SAR and used for direct control of particle size for dispersion analyses. The waste types are not currently addressed in the current procedures as required. However, it

**Review Form for
Safety Basis Flow Down Review Package (SBFDRP)
7823B, C, D LLW Storage Facilities**

appears that they are tracked sufficiently in WIMS to maintain accurate radiological inventory control.
(Noted in SBFDRP).

9. **Are there any known significant problems with the existing authorization basis document(s) for the facility?**
 - SABD's are currently out of date. Obsolete organizations are identified and responsibilities are referenced. USQD's have not been performed to address these changes. This applies to several programs such as QA, NCS, Rad Protection, etc.

10. **Are there any known or suspected problems with the TSR/OSR for the facility?**
 - Yes
 - Waste profile documents contain this requirement, however the flow down to the generator can not be confirmed.

11. **Are there any known or suspected problems with flowing down the requirements of the TSR/OSR for the facility into operating procedures, processes, and/or programs?**
 - Yes
 - Building 7823B, C, and D will need to be categorized as one unit for DOE-STD-1027-92 hazard categorization. However, the total inventory is small compared to the limits and this should not result in a higher category. The sum of the fractions was recalculated considering the three buildings as one facility; the result was 2.7E-3.

12. **Are there any known or suspected problems with the implementation of operating procedures, processes, and/or programs for the requirements of the TSR/OSR/other documents containing the derived controls for the facility?**
 - No
 - Derived controls as defined in the SAR limit on allowable radionuclide inventory. Waste material characteristic limit release.

13. **Are there any conflicts between the report for the DOE-HQ Independent Safety Basis Assessment of BJC and DOE-ORO (led by Mr. Dae Chung) and the SBFDRP for the facility?**
 - Yes
 - See Item 6

14. **Do you disagree with a finding or observation in the SBFDRP for the facility or was the finding or observation not comprehensive enough?**
 - Yes
 - See Item 1

15. **Does one or more of the findings or observations in the SBFDRP for the facility represent a significant problem that calls into question whether the facility's operations should continue?**
 - SABD-Yes, Operation and Procedures - No
 - Facility Categorization - Review of DAC, Isotope Inventory - Validate DOTCalc

16. **Are there any known or suspected conditions that calls into question the effective implementation of the Nuclear Criticality Safety Program for the facility? (e.g., NCSA/NCSE's address fissile material operations in the facility when needed and the NCSA/NCSE requirements are appropriately implemented; etc.)**
 - No

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Safety Basis Flow Down Review Package (SBFDRP)
7823B, C, D LLW Storage Facilities**

- Review of NCSD by NSD SME. There is not a credible criticality scenario because of the facility limits.
17. Are there any known or suspected conditions that calls into question the effective implementation of the Fire Prevention Program for the facility? (e.g., combustible load program exists and properly implemented in the facility; hot work program exists and properly implemented in the facility; Fire Hazard Analysis (FHA) exist for the facility and accurate; FHA results brought over into the facility's accident analysis and properly implemented; fixed fire protection systems exist in the facility and properly maintained [if credited in accident analysis]; etc.)
- Due to the lack of physical separation between the building they will be consider as one facility for facility categorization
 - No other issues identified
18. Are there any known or suspected conditions that calls into question the effective implementation of the Emergency Management Program for the facility? (e.g., Pre-fire Plan exists for the facility; Facility-Level Emergency Plan/Procedure exist; Emergency Drill Program exists and implemented for the facility; etc.)
- No issues identified
 -
19. Are there any known or suspected conditions that calls into question the effective implementation of the Unreviewed Safety Question Program for the facility? (e.g., work control process screens for USQ implications; as-found conditions are screened for USQ implications; changes to the facility or its procedures are screened for USQ implications)
- No
 - There is a corrective action being implemented regarding change to a facility (not this particular facility) prior to completion of the USQD process. This is regarding training issue for USQD's and is being implemented system wide.
20. Are there any conditions that would or does require immediate implementation of compensatory measures to protect workers, public, or environment?
- Yes
 - The facilities 7823 B, C,& D have been segmented, however, because of their proximity they need to be considered as one for Hazard Categorization. WESKEM has issued a memo to require this effective 2/8/02. The SAR evaluates handling and earthquake accidents and assumes that 10% and 23% of the containers, respectively, are breached. An evaluation needs to be performed to determine if barriers or other protective devices are needed to prevent an accident that could rupture more than this percentage of containers. The procedures which control SAB related items (stacking height, inventory, etc.) need to be identified and controlled such that changes to the SAB related items are not made without appropriate review.

Review Form

Facility: Molten Salt Reactor Experiment (MSRE)

Date of Review: February 8, 2002 and February 11, 2002

Please answer the following questions after your review of the Safety Basis Flow Down Review Package (SBFDRP) for your facility:	YES	NO
1. Are there any known or suspected discrepancies between the SBFDRP and your understanding of the facility and its operations?		X
2. Are there any known or suspected hazardous materials or conditions in the facility that were not identified in the SBFDRP for that facility?		X
3. Are there any known or suspected problems with hazard identification documented in the facility's authorization basis document(s)?		X
4. Are there any known or suspected problems with the hazard categorization for the facility (including alternate methods from DOE-STD-1027-92 or inventory control)?		X
5. Are there any known or suspected discrepancies between the operations/ activities described in the SBFDRP for the facility and the activities/operations occurring in or those proposed for the facility in the near term?		X
6. Are there any known or suspected problems with the hazard analyses documented in the facility's authorization basis document(s)?		X
7. Are there any known or suspected discrepancies between the current DOE approved authorization basis document(s) for the facility and the SBFDRP?		X
8. Are there any known or suspected problems with the way controls were derived from the hazard analyses and documented in the facility's authorization basis document(s)?		X
9. Are there any known significant problems with the existing authorization basis document(s) for the facility?		X
10. Are there any known or suspected problems with the TSR/OSR for the facility?	X	
11. Are there any known or suspected problems with flowing down the requirements of the TSR/OSR for the facility into operating procedures, processes, and/or programs?		X
12. Are there any known or suspected problems with the implementation of operating procedures, processes, and/or programs for the requirements of the TSR/OSR/other document containing the derived controls for the facility?	X	
13. Are there any conflicts between the report for the DOE-HQ Independent Safety Basis Assessment of BJC and DOE-ORO (led by Mr. Dae Chung) and the SBFDRP for the facility?		X
14. Do you disagree with a finding or observation in the SBFDRP for the facility or was the finding or observation not comprehensive enough?		X
15. Does one or more of the findings or observations in the SBFDRP for the facility represent a significant problem that calls into question whether the facility's operations should continue?		X

Review Form

Questions (continued)	YES	NO
16. Are there any known or suspected conditions that calls into question the effective implementation of the Nuclear Criticality Safety Program for the facility? (e.g., NCSA/NCSEs address fissile material operations in the facility when needed and the NCSA/NCSE requirements are appropriately implemented; etc.)		X
17. Are there any known or suspected conditions that calls into question the effective implementation of the Fire Prevention Program for the facility? (e.g., combustible load program exists and properly implemented in the facility; hot work program exists and properly implemented in the facility; Fire Hazard Analysis (FHA) exist for the facility and accurate; FHA results brought over into the facility's accident analysis and properly implemented; fixed fire protection systems exist in facility and properly maintained [if credited in accident analysis]; etc.)		X
18. Are there any known or suspected conditions that calls into question the effective implementation of the Emergency Management Program for the facility? (e.g., Pre-Fire Plan exist for the facility; Facility-Level Emergency Plan/Procedure exist; Emergency Drill Program exists and implemented for the facility; etc.)		X
19. Are there any known or suspected conditions that calls into question the effective implementation of the Unreviewed Safety Question Program for the facility? (e.g., work control process screens for USQ implications; as-found conditions are screened for USQ implications; changes to the facility or its procedures are screened for USQ implications)		X
20. Are there any conditions that would or does require immediate implementation of compensatory measures to protect workers, public, or environment?		X

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Please provide an explanation for any YES response to the questions in the Comment section below.

10. The DAE Chung Report indicated that several Defense in Depth controls should be elevated to LCO's. Limiting Conditions of Operations vs. Defense in Depth will be re-evaluated in the BIO/TSR update scheduled for June 30, 2002.

It was also determined that the need to make the criticality alarm system a safety significant system should be re-evaluated. The Team noted, however, that the conduct of operations associated with the criticality alarm was what would be expected if the alarm was designated safety significant. Therefore, the Portable Criticality Alarm System (PCAAS) and monitron operability checks and associated alarm emergency response actions should be considered compensatory measures that cannot be changed without DOE approval. This will be required until the need to consider the PCAAS a safety significant system is re-evaluated by the contractor and approved by DOE. This may be re-evaluated either during a special review or during the review of the update of the BIO/TSR which is scheduled to be issued by June 30, 2002.

12. The BJC assessment noted that a computer program to track inventory was not checked. Closed-In the future instead of using the computer program, MSRE personnel will use manual calculations and independently check the calculations.

The BJC assessment noted that the requirement regarding moisture control/venting cask needs clarification. Procedures MSRE-OR-506 and 547 to clarify requirements for preventing and monitoring for air intrusion to the canister containing uranium laden charcoal are scheduled to be revised by April 30, 2002.

The BJC assessment noted that CLF_3 inventory controls need to be proceduralized. Corrective action plan to be developed by March 19, 2002.

List Team Members Names below:

Mike Jugan	Team Lead & MSRE Project Manager
Rick Farr	Facility Representative
Brenda Hawks	SME Nuclear Criticality Safety
Jim Landmesser	SME Fire Protection Engineer
John Pearson	SME Emergency Management

Review Form

Facility: Tower Shielding Reactor (TSR)

Date of Review: February 8, 2002

Please answer the following questions after your review of the Safety Basis Flow Down Review Package (SBFDRP) for your facility:	YES	NO
1. Are there any known or suspected discrepancies between the SBFDRP and your understanding of the facility and its operations?		X
2. Are there any known or suspected hazardous materials or conditions in the facility that were not identified in the SBFDRP for that facility?		X
3. Are there any known or suspected problems with hazard identification documented in the facility's authorization basis document(s)?		X
4. Are there any known or suspected problems with the hazard categorization for the facility (including alternate methods from DOE-STD-1027-92 or inventory control)?		X
5. Are there any known or suspected discrepancies between the operations/activities described in the SBFDRP for the facility and the activities/operations occurring in or those proposed for the facility in the near term?		X
6. Are there any known or suspected problems with the hazard analyses documented in the facility's authorization basis document(s)?		X
7. Are there any known or suspected discrepancies between the current DOE approved authorization basis document(s) for the facility and the SBFDRP?		X
8. Are there any known or suspected problems with the way controls were derived from the hazard analyses and documented in the facility's authorization basis document(s)?		X
9. Are there any known significant problems with the existing authorization basis document(s) for the facility?		X
10. Are there any known or suspected problems with the TSR/OSR for the facility?		X
11. Are there any known or suspected problems with flowing down the requirements of the TSR/OSR for the facility into operating procedures, processes, and/or programs?		X
12. Are there any known or suspected problems with the implementation of operating procedures, processes, and/or programs for the requirements of the TSR/OSR/other document containing the derived controls for the facility?	X	
13. Are there any conflicts between the report for the DOE-HQ Independent Safety Basis Assessment of BJC and DOE-ORO (led by Mr. Dae Chung) and the SBFDRP for the facility?		X
14. Do you disagree with a finding or observation in the SBFDRP for the facility or was the finding or observation not comprehensive enough?		X
15. Does one or more of the findings or observations in the SBFDRP for the facility represent a significant problem that calls into question whether the facility's operations should continue?		X

Review Form

Questions (continued)	YES	NO
16. Are there any known or suspected conditions that calls into question the effective implementation of the Nuclear Criticality Safety Program for the facility? (e.g., NCSA/NCSEs address fissile material operations in the facility when needed and the NCSA/NCSE requirements are appropriately implemented; etc.)		X
17. Are there any known or suspected conditions that calls into question the effective implementation of the Fire Prevention Program for the facility? (e.g., combustible load program exists and properly implemented in the facility; hot work program exists and properly implemented in the facility; Fire Hazard Analysis (FHA) exist for the facility and accurate; FHA results brought over into the facility's accident analysis and properly implemented; fixed fire protection systems exist in facility and properly maintained [if credited in accident analysis]; etc.)		X
18. Are there any known or suspected conditions that calls into question the effective implementation of the Emergency Management Program for the facility? (e.g., Pre-Fire Plan exist for the facility; Facility-Level Emergency Plan/Procedure exist; Emergency Drill Program exists and implemented for the facility; etc.)		X
19. Are there any known or suspected conditions that calls into question the effective implementation of the Unreviewed Safety Question Program for the facility? (e.g., work control process screens for USQ implications; as-found conditions are screened for USQ implications; changes to the facility or its procedures are screened for USQ implications)		X*
20. Are there any conditions that would or does require immediate implementation of compensatory measures to protect workers, public, or environment?		X

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Please provide an explanation for any YES response to the questions in the Comment section below.

12. It was observed that a TSR checklist does not indicate acceptable values for reactor coolant water resistivity. Water resistivity must be maintained at a specified level to prevent long term damage to the fuel (All readings taken in the last two years were noted as acceptable by the team lead.) In addition, a procedure associated with source checks was observed as requiring a revision to clarify the intent of not checking sources that are located in an area that is unsafe for human entry or otherwise inaccessible. A corrective action plan to address these observations is required. It was concluded that no compensatory measures were required for continued operations.

19*See TSR Review Report-Minor point in that USQD was not performed in a timely manner for removal of a hazard (Na and LiOH shields)during contractor change. Closed-Addressed in a negative USQD.

List Team Members Names below:

Mike Jugan	Team Leader
Leon Duquella	TSR Project Manager
Rick Farr	Facility Representative
Brenda Hawks	SME Nuclear Criticality Safety
Jim Landmesser	SME Fire Protection Engineer
John Pearson	SME Emergency Management

Facility: DMSAs with Fixed CAAS Coverage

Date of Review: February 14, 2002

Please answer the following questions after your review of the Safety Basis Flow Down Review Package (SBFDRP) for your facility.	Yes	No	Justification
1) Are there any known or suspected discrepancies between the SBFDRP and your understanding of the facility and its operations?	X		SBFDRP does not provide a detailed description on the DMSAs since the review combined DMSAs with the C-746-Q Facility on the Management Assessment Checklist and Report (MACR). SBFDRP Observation #2 and #6 indicates BJC reviewers are not certain what SER controls apply and are implemented. Paducah Site Office disagrees. The Safety Basis requirements associated with DMSAs that are under fixed Criticality Accident Alarm System (CAAS) coverage are clearly implemented. Per BJC letter dated December 21, 2001, no work is being performed in the DMSAs which do not have CAAS coverage, due to Safety basis review issues involving the Temporary CAAS (TCAAS).
2) Are there any known or suspected hazardous materials or conditions in the facility that were not identified in the SBFDRP for that facility?		X	SBFDRP MACR for Facility Hazard Characterization Item #6 identifies that characterization information does not exist. The hazardous materials in the DMSAs are uncharacterized. The SBFDRP describes the characterization process. Paducah Site Office concurs and believes the appropriate controls are in place to address the unquantified hazards.
3) Are there any known or suspected problems with hazard identification documented in the facility's authorization basis document(s)?		X	The DOE SER identifies the Hazard Category 2 concern that is supported by the Dae Chung review (pp. E-19). The Health and Safety Plan (HASP) documents the non-nuclear hazards within the DMSAs.
4) Are there any known or suspected problems with the hazard categorization for the facility (including alternate methods from DOE-STD-1027-92 or inventory control)?		X	The DOE SER identifies the Hazard Category 2 concern that is supported by the Dae Chung review (pp. E-19). The DMSAs are categorized as category 2 nuclear facilities. The uncharacterized materials with the potential for nuclear criticality hazards in the DMSAs, necessitate that this level of categorization be applied. The Health and Safety Plan (HASP) documents the non-nuclear hazards within the DMSAs.
5) Are there any known or suspected discrepancies between the operations/activities described in the SBFDRP for the facility and the activities/operations occurring in or those proposed for the facility in the near term?		X	SBFDRP does not provide a detailed description on the DMSAs since the review combined DMSAs with the C-746-Q Facility on the Management Assessment Checklist and Report (MACR). However, the DMSA operations/activities are consistent with the referenced documents on the MACR.
6) Are there any known or suspected problems with the hazard analyses documented in the facility's authorization basis document(s)?	X		The Dae Chung report indicates failure to resolve ORO AMESH review comments could affect the adequacy of the hazards analysis (pp. E-19). However, the report also indicates the controls are adequate to reduce risks (pp. E-20). Based on subsequent assessments by DOE HQ & ORO, as well as an independent consultant, the existing SER is adequate from a safety standpoint.

Facility: DMSAs with Fixed CAAS Coverage

Date of Review: February 14, 2002

7) Are there any known or suspected discrepancies between the current DOE approved authorization basis document(s) for the facility and the SBFDRP?	X		See justification for number 1.
8) Are there any known or suspected problems with the way controls were derived from the hazard analyses and documented in the facility's authorization basis document(s)?	X		See justification for number 6.
9) Are there any known significant problems with the existing authorization basis document(s) for the facility?		X	See justification for number 6. Several independent reviews indicate the controls are adequate for continuing characterization activities (ATL, Dae Chung (pp. E-20, G-2)). However, the DOE Paducah Site Office does not see these problems as significant for continued safe operations in the DMSAs.
10) Are there any known or suspected problems with the TSR/OSR for the facility?		X	The CAAS TSR is the primary TSR requirement associated with the DMSAs. No issues have been identified as the result of the recent Safety Authorization Basis assessments. Some of the SER controls may need to be incorporated as TSR controls.
11) Are there any known or suspected problems with flowing down the requirements of the TSR/OSR for the facility into operating procedures, processes, and/or programs?		X	BJC's procedural process does not require that the flowdown of safety requirements into implementing procedures be controlled. However, a crosswalk has been developed for the Paducah Site in general and the DMSAs in particular. The crosswalk ensures the flowdown of Safety Basis requirements. The SBFDRP Observation #6 identifies some weaknesses in how the SER flowdown was evaluated but not on actual flowdown problems.
12) Are there any known or suspected problems with the implementation of operating procedures, processes, and/or programs for the requirements of the TSR/OSR/other document containing the derived controls for the facility?	X		Deficiencies have been identified through the DOE Paducah Site Office Monthly Oversight and Inspection Reports (MOIR). The deficiencies are being addressed by BJC in response to these findings. However, the DOE Paducah Site Office does not see these problems as significant for continued safe operations in the DMSAs.
13) Are there any conflicts between the report for the DOE-HQ Independent Safety Basis Assessment of BJC and DOE-ORO (led by Dae Chung) and the SBFDRP for the facility?		X	Since the scope and purpose of the DOE-HQ Independent Safety Basis Assessment of BJC and the SBFDRP appear to be different, it is not very useful to compare the two documents directly. However, based on our review of the two documents, there do not appear to be any discrepancies.
14) Do you disagree with a finding or observation in the SBFDRP for the facility or was the finding or observation not comprehensive enough?		X	<p>Finding #2 and Observations #3, #4, #5 and #6 do not apply to DMSAs.</p> <ul style="list-style-type: none"> • Finding #1 can be applied to DMSAs even though it was based upon the cylinder yards fire scenario. • Observation #1 does not impact safety, since the Authorization Agreements do not provide additional technical justification or safety related requirements. • Observation #2 is valid. The lack of DOE approval has made the Safety Authorization Basis more complex. However, the additional complexity has not resulted in a degradation of the safety within the DMSA operations.

Facility: DMSAs with Fixed CAAS Coverage

Date of Review: February 14, 2002

<p>15) Does one or more of the findings or observations in the SBFDRP for the facility represent a significant problem that calls into question whether the facility's operations should continue?</p>	<p>X</p>	<p>See justification for number 14.</p>
<p>16) Are there any known or suspected conditions that calls into question the effective implementation of the Nuclear Criticality Safety Program for the facility? (e.g. NCSA/NCSEs address fissile material operations in the facility when needed and the NCSA/NCSE requirements are appropriately implemented; etc)</p>	<p>X</p>	<p>BJC procedures do not provide clear guidance on how to select and control posting requirements used for fissile material operations. The NCS requirements derived within Nuclear Criticality Safety Evaluations (NCSEs) are incorporated in implementing procedures and are also included on postings near the fissile material operations within the field. Inconsistencies observed in several postings for fissile material operations (from Paducah Monthly Oversight Reports) indicate that the selection process used to determine which NCS controls are posted appears to be inadequately defined. However, the DOE Paducah Site Office does not see these problems as significant for continued safe operations in the DMSAs. Additionally, the Dae Chung report indicates the BJC NCS Program at Paducah is adequately staffed and conforms to the BJC program requirements for NCS engineers (pp. G-2)</p>
<p>17) Are there any known or suspected conditions that calls into question the effective implementation of the Fire Prevention Program for the facility? (e.g. combustible load program exists and properly implemented in the facility; hot work program exists and properly implemented in the facility; Fire Hazards Analysis (FHA) exist for the facility and accurate; FHA results brought over into facility's accident analysis and properly implemented; fixed fire protection systems exist in facility and properly maintained [if credited in accident analysis]; etc.)</p>	<p>X</p>	<p>Fire Hazards Analysis (FHA) and the combustible control programs do not adequately address the accumulation or compilation of combustible materials within an area. In particular, the wood pallets used to store waste drums are often replaced by metal or plastic pallets. The wood pallets are then stacked and sometimes wrapped in plastic (near the waste containers). In addition, the wood pallets occasionally accumulate lubricating oil originating from the uranium enrichment process. Thus, the operation that was originally analyzed may differ from the as-found conditions. This change in configuration should be evaluated and will be identified as a finding in the February MOIR.</p>
<p>18) Are there any known or suspected conditions that calls into question the effective implementation of the Emergency Management Program for the facility? (e.g. Pre-Fire Plan exist for the facility; Facility-Level Emergency Plan/Procedure exist; Emergency Drill Program exists and implemented for the facility; etc.)</p>	<p>X</p>	<p>The DOE Paducah Site Office believes the Emergency Management Program is adequately implemented at Paducah. However, the Emergency Action Levels for fire are general and rely heavily on the Plant Shift Superintendent's decisions. Additionally, Work Authorizations with the United States Enrichment Corporation (USEC) have not been signed, but this support is being provided under "bridge letters" on a monthly basis .</p>

Facility: DMSAs with Fixed CAAS Coverage

Date of Review: February 14, 2002

<p>19) Are there any known or suspected conditions that calls into question the effective implementation of the Unreviewed Safety Question Program for the facility? (e.g. work control process screens for USQ implications; as-found conditions are screened for USQ implications; changes to the facility or its procedures are screened for USQ implications)</p>		<p>X</p>	<p>The issues that have been identified by NCD personnel focus on the over conservatism of the USQD process (i.e. declaring a USQ when a condition should be evaluated as a PISA). The Dae Chung report finding MG9 (pp. 24) indicates subcontractors do not use the BJC procedure for performing USQDs. This is not the case at Paducah.</p>
<p>20) Are there any conditions that would or does require immediate implementation of compensatory measures to protect workers, public, or environment?</p>		<p>X</p>	<p>Recent assessments of the oversight process have not identified any safety issues that are an immediate threat to Health or Safety. However, DOE will require a two-day advance notification to the Paducah Site Office for entry into phase 2 DMSAs for initial nuclear criticality safety characterization.</p>

Review Team Members:

Craig Czuchna	Project Manager
Greg Bazzell	Facility Representative (Paducah)
Tom Hines	Support Services Subcontractor (NRE)
Brenda Hawks	Nuclear Criticality Safety SME
Jim Landmesser	Fire Protection SME
Catherine Schidal	Facility Representative (qualified)
Mike Henry	Support Services Subcontractor (NRE) for Emergency Management

Review Form

Facility: Portsmouth Critical Category 2 Facilities
X-7725, X-7745R, X-362 L-cage, X-326 DMSAs, X-744G

Date of Review: 2/25/02

Please answer the following questions after your review of the Safety Basis Flow Down Review Package (SBFDRP) for your facility:	YES	NO
1. Are there any known or suspected discrepancies between the SBFDRP and your understanding of the facility and its operations?	X	
2. Are there any known or suspected hazardous materials or conditions in the facility that were not identified in the SBFDRP for that facility?		X
3. Are there any known or suspected problems with hazard identification documented in the facility's authorization basis document(s)?		X
4. Are there any known or suspected problems with the hazard categorization for the facility (including alternate methods from DOE-STD-1027-92 or inventory control)?		X
5. Are there any known or suspected discrepancies between the operations/ activities described in the SBFDRP for the facility and the activities/operations occurring in or those proposed for the facility in the near term?		X
6. Are there any known or suspected problems with the hazard analyses documented in the facility's authorization basis document(s)?	X	
7. Are there any known or suspected discrepancies between the current DOE approved authorization basis document(s) for the facility and the SBFDRP?		X
8. Are there any known or suspected problems with the way controls were derived from the hazard analyses and documented in the facility's authorization basis document(s)?		X
9. Are there any known significant problems with the existing authorization basis document(s) for the facility?		X
10. Are there any known or suspected problems with the TSR/OSR for the facility?		X
11. Are there any known or suspected problems with flowing down the requirements of the TSR/OSR for the facility into operating procedures, processes, and/or programs?		X
12. Are there any known or suspected problems with the implementation of operating procedures, processes, and/or programs for the requirements of the TSR/OSR/other document containing the derived controls for the facility?	X	
13. Are there any conflicts between the report for the DOE-HQ Independent Safety Basis Assessment of BJC and DOE-ORO (led by Mr. Dae Chung) and the SBFDRP for the facility?	X	
14. Do you disagree with a finding or observation in the SBFDRP for the facility or was the finding or observation not comprehensive enough?	X	
15. Does one or more of the findings or observations in the SBFDRP for the facility represent a significant problem that calls into question whether the facility's operations should continue?		X

Review Form

Questions (continued)	YES	NO
16. Are there any known or suspected conditions that calls into question the effective implementation of the Nuclear Criticality Safety Program for the facility? (e.g., NCSA/NCSEs address fissile material operations in the facility when needed and the NCSA/NCSE requirements are appropriately implemented; etc.)		X
17. Are there any known or suspected conditions that calls into question the effective implementation of the Fire Prevention Program for the facility? (e.g., combustible load program exists and properly implemented in the facility; hot work program exists and properly implemented in the facility; Fire Hazard Analysis (FHA) exist for the facility and accurate; FHA results brought over into the facility's accident analysis and properly implemented; fixed fire protection systems exist in facility and properly maintained [if credited in accident analysis]; etc.)		X
18. Are there any known or suspected conditions that calls into question the effective implementation of the Emergency Management Program for the facility? (e.g., Pre-Fire Plan exist for the facility; Facility-Level Emergency Plan/Procedure exist; Emergency Drill Program exists and implemented for the facility; etc.)		X
19. Are there any known or suspected conditions that calls into question the effective implementation of the Unreviewed Safety Question Program for the facility? (e.g., work control process screens for USQ implications; as-found conditions are screened for USQ implications; changes to the facility or its procedures are screened for USQ implications)		X
20. Are there any conditions that would or does require immediate implementation of compensatory measures to protect workers, public, or environment?		X

Please provide an explanation for any YES response to the questions in the Comment section below.

COMMENTS: (continue as needed on attached sheets)

Please see attached sheet with explanations for Yes responses for questions 1, 6, 12, 13, and 14.

List Team Members Names below:

Explanation of Yes Responses to Portsmouth Safety Basis Review Form

1. The SBFDRP did not identify the Process hazard Analysis/Plant Safety Operational Analysis (PrHA/PSOA) as the documents that identify the hazard category for PORTS Category 2 facilities.
6. The Portsmouth "B" comments on the 1998 SAR update have never been resolved.
12. The SAR identified control of combustibles in the DUF₆ cylinder yards. BJC has identified a procedural problem with control of combustibles in the DUF₆ cylinder yards. The procedure does not clearly flow down the SAR requirements. Because there is lack of evidence that the SAR requirements are specifically flowed down, administrative controls are being implemented by the BJC supervisor at the cylinder yard while the current procedures are being revised.
13. The Portsmouth staff is still reviewing and comparing the SBA by BJC and the Chung report. For example, the Chung report identifies deficiencies with the DMSA program at Paducah and extended the deficiencies to Portsmouth. The comparison between the DMSAs at Paducah and Portsmouth is not correct, since the two programs are managed totally different. In addition, the comment on hazard categorization is questionable and Portsmouth does not agree with the statement.
14. There are discrepancies in the SBFDRP, such as training for Facility Managers.