Independent Oversight Review of Implementation Verification Review Processes at the Idaho Site – Phase 1 of 2

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Acronyms

AMWTP	Advanced Mixed Waste Treatment Project
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ATR	Advanced Test Reactor
BEA	Battelle Energy Alliance, LLC
CFR	Code of Federal Regulations
CRAD	Criteria, Review, and Approach Document
CWI	CH2M-WG Idaho, LLC
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
DOE-ID	DOE Idaho Operations Office
DSA	Documented Safety Analysis
EBR	Experimental Breeder Reactor
EM	Office of Environmental Management
FMF	Fuel Manufacturing Facility
FR	Facility Representative
FRM	Form
FY	Fiscal Year
HEPA	High Efficiency Particulate Air
HFEF	Hot Fuel Examination Facility
HSS	Office of Health, Safety and Security
ICP	Idaho Cleanup Project
INL	Idaho National Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
IVR	Implementation Verification Review
LCO	Limiting Condition for Operation
LST	List
LWP	Laboratory Wide Procedure
MCP	Management Control Procedure
MFC	Materials and Fuels Complex
MSA	Management Self-Assessment
NE	DOE Office of Nuclear Energy
NMIS	Nuclear Materials Inspection & Storage
NSP	Nuclear Safety and Performance
NSS	Nuclear Safety Specialist
OFI	Opportunity for Improvement
OPAD	Operational Performance Assurance Division
ORPS	Occurrence Reporting and Processing System
PISA	Potential Inadequacy in the Safety Analysis
RWMC	Radioactive Waste Management Complex
SAC	Specific Administrative Control
SAR	Safety Analysis Report
SSO	Safety System Oversight
TSR	Technical Safety Requirement

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1.0 PURPOSE

This report documents the first phase of an independent review of implementation verification review (IVR) processes at the Idaho Site conducted by the Office of Enforcement and Oversight (Independent Oversight) within the Office of Health, Safety and Security (HSS). The review was performed by the HSS Office of Safety and Emergency Management Evaluations and was carried out within the broader context of an ongoing program of assessments of the execution of IVRs at U.S. Department of Energy (DOE) sites with hazard category 1, 2, and 3 facilities. The purpose of the complete Independent Oversight review is to evaluate, in two phases, the processes and methods used at the Idaho Site for verifying implementation of new or substantially revised facility safety basis hazard controls. The objective of this Phase 1 assessment was to evaluate the extent to which the Idaho Operations Office (DOE-ID) and primary facility contractors have developed and employed appropriate implementation verification methods. In Phase 2 of this effort, Independent Oversight will assess the consistency and adequacy of the Idaho Site implementation verification processes by shadowing and observing applicable surveillance, oversight, and IVR activities at the Idaho Site.

Phase 1 of this review was conducted at the Idaho Site during the period of September 12-23, 2011. This report discusses the background, scope, results, and conclusions of the review, as well as items identified for further follow-up by HSS.

2.0 SCOPE

At the Idaho Site, DOE-ID provides direction and oversight for the design and operation of the nuclear facilities of the Idaho National Laboratory (INL) and Idaho Cleanup Project (ICP) for the DOE Headquarters Offices of Nuclear Energy (NE) and Environmental Management (EM), respectively. Within DOE-ID, two line management organizations exercise responsibility for oversight of these nuclear facilities and their activities. Under the Deputy Manager for Operations Support, the Operational Performance Assurance Division (OPAD) Director is responsible for contractor oversight of the NE facilities. Under the Deputy Manager for ICP, oversight of the EM facilities is the responsibility of the Assistant Manager for Nuclear Safety and Performance (NSP).

The primary contractors responsible for the management and operation of the INL and ICP facilities are Battelle Energy Alliance, LLC (BEA) and CH2M-WG Idaho, LLC (CWI), respectively. The majority of these facilities, which have either been categorized as Hazard Category 1, 2, or 3, pursuant to DOE-STD 1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23*, *Nuclear Safety Analysis Reports*, are located at the Advanced Test Reactor (ATR) Complex, the Materials and Fuels Complex (MFC), the Idaho Nuclear Technology and Engineering Center (INTEC), and the Radioactive Waste Management Complex (RWMC). BEA operates the ATR Complex and MFC, while CWI operates the ICP facilities, e.g., INTEC and RWMC, excluding facilities that are part of the Advanced Mixed Waste Treatment Project (AMWTP). AMWTP is operated by a separate contractor, Idaho Treatment Group, LLC (ITG), and was not included in this review due to a recent and ongoing contract change.

For Phase 1 of this review, Independent Oversight assessed the establishment and implementation of DOE-ID and contractor processes and activities for verifying the implementation of changes to facility

safety basis hazard controls. This scope was consistent with completion of Objectives 1 and 2 in the HSS Criteria, Review, and Approach Document (CRAD) HSS CRAD 45-39, Rev. 1, *Implementation Verification Review of Safety Basis Hazard Controls: Inspection Criteria, Activities, and Lines of Inquiry*. The objective was to determine whether:

1) Processes have been established that provide assurance that safety basis hazard controls are maintained and hazard control changes are correctly implemented.
2) The contractor and site office have developed and implemented appropriate methods for performing IVRs or similar reviews.

The remaining objectives (3 through 6) expressed in HSS CRAD 45-39, Rev. 1, require observation of various implementation and implementation verification activities; these objectives will be fulfilled in Phase 2 of this review.

This Phase 1 assessment was accomplished by reviewing the documentation that establishes and governs the DOE-ID and contractor implementation verification processes (e.g., work instructions, procedures, forms, and checklists), interviewing key DOE-ID and contractor facility personnel, and reviewing completed assessments of safety basis control implementation. The Independent Oversight team also used the electronic document management systems to acquire documentation and independently review completed assessments of safety basis hazard control implementation.

Due to a recent and ongoing contract change, the assessment of AMWTP commensurate with the purpose, goals, and objectives of this review has been deferred, as mentioned above. AMWTP will be revisited after the new contractor has had the opportunity to fully implement any directional and procedural changes that it has committed to, and after DOE-ID has fully incorporated any oversight changes associated with the new contractor.

3.0 BACKGROUND

Subpart B of 10 Code of Federal Regulations (CFR) 830.201, *Performance of Work*, states, "A contractor must perform work in accordance with the safety basis for a hazard category 1, 2, or 3 DOE nuclear facility and, in particular, with the hazard controls that ensure adequate protection of workers, the public, and the environment." In addition, 10 CFR 830, Subpart A, *Quality Assurance Requirements*, establishes requirements for conducting activities that may affect safety at these facilities, including performing work in accordance with hazard controls, using approved instructions or procedures, conducting tests and inspections of items and processes, and independently assessing the adequacy of work performance.

In February 2008, the Defense Nuclear Facilities Safety Board requested that DOE evaluate the need to conduct "independent validations on a recurring basis" to ensure that facility equipment, procedures, and personnel training related to safety basis hazard controls have not degraded over time. In response, DOE conducted an evaluation that led to the conclusion that the existing requirements for implementation of safety controls and DOE policy for oversight of the implementation of nuclear safety requirements were appropriate. The evaluation also concluded DOE requirements did not include an explicit requirement to validate safety basis hazard controls, so the Department committed to develop guidance on the validation of safety controls and to add that guidance to the Department's directives.

A DOE working group developed a "best practices guide" for the independent validation of safety basis hazard controls. The draft guide, together with expectations for its implementation, was provided to National Nuclear Safety Administration (NNSA) and EM sites by joint memorandum from the Assistant Deputy Administrator for Nuclear Safety and Operations and the Deputy Assistant Secretary of Safety

Management, respectively, in March 2009. The memorandum directed NNSA and EM sites to compare their current processes to the practices in the guide and to adjust site processes, if appropriate. The memorandum requested feedback from the sites on the draft guide's best practices and indicated that, after a period of six months, a path forward would be determined. In November 2010, final guidance for performing IVRs was incorporated into DOE Guide 423.1-1A, *Implementation Guide for Use in Developing Technical Safety Requirements*, Appendix D, *Performance of Implementation Verification Reviews (IVRs) of Safety Basis Controls*. Although NE's INL programs, operated by BEA at the Idaho Site, are not contractually obligated to follow DOE Guide 423.1-1A, DOE-ID and INL have voluntarily implemented implementation verification programs across the site that do adhere to parts of the guide. As the guide flows from 10 CFR 830, such a decision to implement its guidance allows for consistency between the EM and NE sides of the site, as well as an enhanced opportunity to maintain regulatory compliance.

4.0 RESULTS

The following sections discuss the observations made by Independent Oversight during Phase 1 of this review. As discussed above, in the context of HSS CRAD 45-39, Rev. 1, Objectives 1 and 2, Independent Oversight reviewed the safety basis change implementation verification programs of the various organizations responsible for operating the Idaho Site. The results of this review are discussed below.

Objective 1: Processes have been established that provide assurance that safety basis hazard controls are maintained and hazard control changes are correctly implemented.

Independent Oversight reviewed the operations office and contractor to determine whether processes had been established to assure implementation and maintenance of new and/or revised safety basis hazard controls.

DOE Idaho Operations Office

Independent Oversight reviewed DOE-ID processes to determine whether the processes adequately assess the contractor's implementation of new and revised safety basis documents and provide sufficient information to confirm the ongoing effectiveness of contractor processes for the implementation of safety basis requirements.

DOE-ID oversight of the contractor's programs for implementing new or revised safety basis hazard controls is implemented through its work instruction 03.WI.01.04, *Safety Basis Review and Approval*, Rev. 5. This work instruction provides procedural direction for review and approval of safety basis documents, such as the documented safety analysis (DSA) and technical safety requirements (TSRs), and assigns responsibility for verifying contractor implementation of the approved safety basis (including conditions of approval) to NSP and OPAD. The results of the implementation reviews are documented and transmitted to the contractor in accordance with the DOE-ID work instruction governing oversight activities. At the time of this review, this work instruction was being revised to add substantial value by providing additional, detailed direction for performing the implementation verification. The revised work instruction was subsequently issued in September 2011.

DOE-ID has established appropriate processes for planning and conducting oversight of the contractor's activities, including periodic verification that safety basis hazard controls are in place. The contract oversight process description describes the overall process for developing and implementing an oversight plan and reporting the results. Detailed instructions for preparing the oversight plan are provided in work

instruction 03.WI.04.01, *Oversight Planning and Scheduling*. This work instruction establishes roles and responsibilities for annual oversight planning, provides for preparation of separate plans for each contractor, includes coordination of oversight with the contractor assurance processes, and addresses both long-term (3-year) and quarterly schedules. The instructions govern planning conducted by each of the responsible groups, including nuclear safety, safety system oversight (SSO), and Facility Representatives (FRs). The work instruction discusses nuclear safety and the use of risk in establishing the oversight schedule, oversight of the contractor assurance system, and references a list of topical areas to be considered.

Information for conducting oversight activities is provided in a second work instruction, 03.WI.04.02, *Conduct of Oversight Activities*, which governs execution of the oversight plans. The instruction addresses a range of oversight activities from audits and formal reviews to operational awareness activities. Instructions are provided for planning, execution, and documentation of the results, including identification and transmission of issues. Results of oversight activities are recorded in an electronic database (PEGASUS) and several appendices to the instruction contain guidance for using PEGASUS to document the activities. Assessments are entered by subject and include a discussion of the scope of the assessment, assessment details, and steps taken to ensure factual accuracy. A typical assessment report format is provided and includes sections on the objective, approach, discussion, and conclusion. FR operational awareness reports are documented per instructions in a separate appendix. The results of the oversight activities and the evaluation of contractor performance are summarized in weekly and monthly evaluation reports, as well as monthly assessment reports.

DOE-ID has also published a directive that establishes an SSO program. The directive provides an overview of the program and assigns personnel within DOE-ID to perform assessments and investigations of assigned systems to "verify performance against established safety requirements." Within NSP, these functions are performed by the nuclear safety specialists on the nuclear safety team, and in OPAD, the functions are performed by two personnel directly assigned to SSO. The directive provides a broad discussion of the SSO roles and functions, which include oversight of the contractor's cognizant system engineer program, review of system health reports and test results, assessments, and periodic evaluations of equipment configuration and material condition for reliable performance of safety functions. The SSO duties also include assessment of contractor compliance with safety basis requirements; although no specific reference is made to TSR implementation. Personnel assigned SSO responsibilities are expected to assess assigned vital safety systems on a periodic basis following the DOE-ID oversight plan and oversight procedures. The directive also discusses roles and responsibilities for coordinating the oversight activities of the FRs, SSO personnel, and subject matter experts.

DOE-ID oversight of safety basis hazard control implementation is also executed by the FRs, whose activities are governed by the FR program directive. This directive addresses the scope of the program, responsibilities of key personnel, training and qualification of the FRs, FR responsibilities and functions, and program performance. FRs are expected to observe, evaluate, and report on the effectiveness of the contractor's operations in multiple areas affecting safe, efficient operations, including operational performance, quality assurance, management controls, and worker safety. FRs verify that work activities are being performed safely through periodic observations of the facility and work in progress, document reviews, and attendance at management meetings. The Director, OPAD, provides the primary point of contact for the FR training and qualification process and is the line manager for the FRs in the DOE-ID Office of Operations Support. For ICP, the FRs report to the DOE-ID Waste Disposition and Facility & Material Disposition Assistant Managers.

DOE-ID has an appropriate procedure in place to oversee the startup and restart of nuclear facilities. Work instruction 03.WI.04.10, *Verification of Readiness to Startup or Restart Nuclear Facilities*, identifies the roles and responsibilities for determining the type of required readiness review, identifying

the approval authority, and executing the review. The procedure includes an adequate set of instructions to guide the performance of both DOE operational readiness reviews and readiness assessments, and provides additional instructions for providing line management oversight of the contractor's readiness process. The procedure appropriately requires the development of evaluation criteria as part of the planning process and references DOE-STD-3006 for determining acceptable methods and approaches, though it does not specifically reference the use of the IVR as an element of the startup or restart process.

CH2M-WG Idaho, LLC, and Battelle Energy Alliance, LLC

Independent Oversight reviewed the procedures and processes established by CWI and BEA to implement and maintain the safety basis hazard controls at their facilities. The review was conducted to determine whether contractor processes and/or procedures include an IVR or similar process for the implementation of new or revised safety basis documents. The review also assessed these processes and procedures to determine whether they contained an appropriate level of planning and formality for re-verification of safety basis hazard controls and for verification of the implementation of safety basis requirements prior to the startup of new or modified facilities with new or revised safety basis documents.

CH2M-WG Idaho, LLC

Independent Oversight found that CWI has established appropriate processes to confirm that safety basis hazard controls are in place following approval of new or revised safety basis documents. Management Control Procedure (MCP)-2449, *ICP Nuclear Safety Analysis*, governs the preparation, review, approval, and maintenance of safety authorization basis documents. It specifically requires that Safety Analysis Report (SAR)-100, *ICP Standardized Safety Analysis Report*, chapters and TSR-100, *ICP Standardized Technical Safety Requirements*, be subject to annual reviews, updates, and implementation. Although less specific with regard to an annual review for other DSAs and TSRs, the procedure does address the performance of annual reviews. The procedure also states that implementation of new or revised safety basis documents will be completed within 30 days from the date of the DOE-ID approval letter, though it allows for an extended implementation (60 days or 90 days) if needed. Appendix B of the procedure, *Annual Review Checklist*, addresses, for example, the following topics: unreviewed safety questions, justifications for continued operations, existing accident analysis, TSR operational margin, new or revised technical documents, and audit findings. The annual review checklist is used to determine if an annual update needs to be submitted to DOE. Appendix C, *Specific Administrative Controls*, states that implementation and effectiveness assessments of each specific administrative control (SAC) will be performed concurrently with the annual review of each safety basis document.

Implementation of safety basis document hazard controls is specifically addressed in MCP-1519, *ICP Projects Requirement Change Implementation*, which establishes the method for planning and documenting the implementation. The nuclear facility manager is assigned numerous responsibilities in this procedure, including selection of the implementation team and team lead, approval of the implementation strategy, and determination of the need for an independent review. The facility manager also issues the requirements documents (DSA, TSR, or one of several contractor-approved lists of requirements) and implementing documents, and notifies management and the authorizing authority when implementation is complete and the requirements documents are effective. The implementation strategy is documented on Form (FRM)-579, *ICP Project Change Implementation Strategy*, whose use is mandatory for all safety basis document changes. FRM-579A provides instructions for completing the form, including an example of an implementation strategy matrix. Required information includes, for example, the scope and type of change, document information, the implementation strategy matrix, strategy concurrence and approval, training analysis, and independent review (if applicable). The implementation strategy matrix is a requirements table that includes the specific requirement, implementing document or method, and implementation tasks. Appendix A, *Guidance for Creating an Implementation Strategy*, addresses topics that should be considered in the scope of the change, including

the performance of the initial TSR surveillance as part of implementation of a new or modified control or system.

The development of the company-wide assessment schedule is addressed in MCP-9172, *Developing, Integrating, and Implementing Assessment Schedules*. The annual integrated assessment schedule includes management assessments, independent assessments, management reviews, inspections, surveillances, and management self-assessments (MSAs) for readiness. List (LST)-202, *Company-level Required Assessments*, compiles the assessment requirements contained in the ICP contract List B and other contractual documents. A table of organizational assessments includes the requirements to maintain the safety management programs listed in TSR-100 (Limiting Condition for Operation 3.100.6.1) and to verify implementation of TSR SACs in accordance with DOE-STD-1186-2004. As previously noted, MCP-2449 requires an annual effectiveness review of the SACs as part of the annual update review of the SAR and TSR. Although this procedure is fairly comprehensive, it does not currently address a full review of the hazard controls in the TSR and contractor-approved lists over a specific period of time. (See Opportunities for Improvement, **OBS-1**.)

The processes for startup and restart of nuclear facilities are addressed in MCP-2783, *Verification of Readiness to Start Up or Restart Nuclear Facilities*. This procedure covers, for example, startup of new facilities with a new DSA and TSR, conversion of an existing facility with a new DSA and TSR, upgrade of hazard categorization, and substantial modifications. A prerequisite within the procedure is that the DSA and TSRs must be implemented prior to commencing the readiness review. Appendix B addresses the 17 core requirements that must be considered for a readiness review, including the requirements relevant to facility safety documentation (e.g., approved, implemented, verified, and current). The *Definitions* section of the procedure references the IVR process, stating that a successful IVR may be a prerequisite to the start of a readiness review and refers the user to MCP-1519. MCP-1126, *Performing Management Self-Assessments for Readiness*, applies to the conduct of any MSAs to achieve readiness and provides a graded approach based upon the hazard of the activity. Appendix A, "MSA Generic Criteria Guide," includes criteria to ensure that facility safety documentation is in place and has been implemented; TSR-referenced steps in procedures can be performed in a consistent manner; personnel have been trained on safety documentation; and structures, systems, and components have been identified, meet design criteria, and are operational. Appendix B, "Task List," also addresses the implementation of safety basis requirements.

Battelle Energy Alliance, LLC

BEA uses FRM-411, *INL Nuclear Facility Standard Safety Basis Implementation Checklist*, to provide a written plan for the implementation of new or revised, DOE-approved safety bases. Although this document is listed as a form, it is a detailed procedure that addresses a number of functional areas that are potentially impacted by the change (e.g., document management, training, and emergency management). The checklist is prepared by an implementation coordinator, reviewed by the nuclear facility manager, and approved by the operations director. As part of the execution of the checklist, facility management determines whether an MSA is required for the implementation. The implementation coordinator also initiates a training needs analysis for the changes and prepares a matrix per FRM-422, *Implementation Matrix and Plan*, listing the documents that will be created, revised, or superseded as part of the implementation. Overall, the form is well-structured and comprehensive, and the logical implementation path provides an appropriate level of guidance to ensure a smooth transition from the old to the new or revised safety basis.

BEA also has a separate procedure to govern the actions for implementing the controls associated with a potential inadequacy in the safety analysis (PISA). This procedure, Laboratory Wide Procedure (LWP)-9904, requires the use of a checklist to identify and confirm the implementation of compensatory actions

(controls) for the PISA and any subsequent actions resulting from the evaluation of the safety of the situation.

LWP-13730, *Developing and Maintaining Assurance Portfolios and Schedules*, governs the development of assessment activities and assurance schedules. In accordance with the contractor assurance system (CAS), the procedure establishes the roles and responsibilities and contains the implementing instructions for developing an integrated assurance schedule. Assurance activities, ranging from inspections and surveillances to management and independent assessments, are based on an analysis of the requirements and risks associated with the BEA facilities and scheduled with a frequency based on the perceived risk associated with the operation or activity. BEA has developed an appropriate suite of procedures to provide instructions for each of the assessment activities. For example, LWP-13740, *Performing Surveillances*, provides instructions for planning, conducting, and documenting observations of specific activities using a checklist process. LWP-13750, *Performing Management Assessments*, and LWP-13760, *Performing Independent Assessments*, provide adequate sets of instructions for planning and conducting these more formal assessments, which are generally performed by teams using a defined scope, depth, and criteria.

BEA performs periodic independent safety system assessment reviews, whose purpose is to review system operability, reliability, and material condition, per LWP-13760. The systems are assessed to determine their ability to perform the design and safety functions, physical configuration (compared to system documentation), and component and system performance (compared to established performance criteria) using lines of inquiry derived from GDE-10601, *Criteria Review and Approach Document (CRAD) Guidance for Safety System Assessments*.

BEA implements the DOE Order 425.1D, *Verification of Readiness to Start Up or Restart Nuclear Facilities*, through MCP-9902, *Verification of Readiness to Start Up or Restart Nuclear Facilities*. This procedure documents whether the changes require an MSA, operational readiness review, or readiness assessment. BEA uses LWP-9903, *Performing Management Self Assessments for Readiness*, to confirm readiness for startup or restart of a facility or activity. The procedure describes the process for managers to independently confirm readiness and addresses planning, conducting, and documenting the MSA. The instructions address development of an MSA plan using generic criteria provided in an appendix and an accompanying task list, and documentation of pre-start and post-start findings in a report. Although the generic criteria generally address the implementation of the safety basis, the procedure does not reference the TSRs, surveillances, IVRs, or the processes in FRM-411. (See Opportunities for Improvement, **OBS-2**.)

Objective 2: The contractor and operations office have developed and implemented appropriate methods for performing IVRs or similar reviews.

Independent Oversight reviewed the operations office and contractor IVR methods to determine whether the methods adequately address the implementation of safety basis hazard controls. The review also examined whether review criteria and approaches are appropriately tailored to the hazard controls being verified and sufficient for the scope of the review, and whether the review activities are sufficiently well documented (per procedures) to support the conclusions of the review.

DOE Idaho Operations Office

Independent Oversight found that DOE-ID conducts independent IVRs following notification that the contractor has implemented the approved changes to the DSA and TSR. DOE-ID has recently initiated actions to consolidate oversight responsibility for safety basis implementation and improve consistency of the reviews by the DOE-ID personnel. Interviews indicated that the responsibility for conducting the

verifications was assigned to the nuclear safety specialists in early 2011. Previously, the implementation verification was assigned to the FRs, who focused on validation that the contractor had appropriately followed its implementation processes. Since responsibility for the verification was transferred to the nuclear safety specialists, the process has undergone changes to incorporate additional guidance (such as DOE Guide 423.1-1A) and to increase the amount and depth of independent sampling.

Independent Oversight reviewed a sample of IVR assessments completed by DOE-ID personnel responsible for oversight of ICP during the past two calendar years. Documentation for assessments conducted in 2010 by the FRs included appropriate discussion of the review process, criteria, and conclusions. As indicated in the interviews, the assessments focused on the use of the contractor's established processes for implementing the changes. Implementation of changes to the safety basis documents in 2011 have been reviewed by the nuclear safety specialist responsible for the facility. The assessments are thoroughly documented, providing evidence of the methods and approaches used and adequate support for the conclusions. Two of the most recent assessments incorporated criteria from DOE Guides 414.1-1B and 423.1-1A, and in some recent assessments, the assessors independently reviewed the implementation of the changes in the facility's procedures. Several of the reviews identified issues or observations.

Review of the assessment schedules for ICP prepared by NSP for the last two fiscal years revealed that the schedules cover reviews, surveillances, and audits, and present the assessments planned for the next three fiscal years with the current year divided into its four quarters. The schedules include vital safety system surveillances for each of the active safety systems in the SSO oversight program every year and include reviews of the SACs at each of the nuclear facilities such that all the SACs are evaluated every three years. The schedules also include an operational awareness surveillance of the DSA and TSR to be conducted by the FRs. Although mostly complete, the schedules do not specifically address periodic verification of all the safety basis hazard controls, such as the facility design features. (See Opportunities for Improvement, **OBS-3**.)

Independent Oversight verified that NSP personnel had completed all the SSO and SAC assessments scheduled in 2010 and 2011 to date and reviewed a sample of the completed assessments. Overall, the assessments were well documented, with the reports typically including objectives and scope, references, discussion of the assessment process, and conclusions. The reports provide evidence of the document reviews, interviews, and work observations conducted as part of the review, and the level of detail is sufficient to support the conclusions. For example, the SSO reports document review of maintenance related to the system, observation of some surveillance tests, and review of completed surveillance test documentation. In one case, the reviewer identified four issues for correction by the contractor.

Independent Oversight reviewed the documentation for several reviews of contractor implementation of new or revised safety basis controls conducted by OPAD during the past two years. Some assessments were independent while others involved either shadowing the contractor's assessment or focused on verification that the contractor followed their established implementation process. For example, a surveillance of changes to the ATR Critical Facility SAR and TSR conducted for the annual update in 2010 identified specific significant changes and focused on the completeness of the implementation checklist. Similarly, DOE oversight of changes to the SAR and TSR at the Radioactive Scrap and Waste Facility (MFC-771) focused on execution of the FRM-411 process. However, a more recent review, an FR assessment of a change to a TSR for the ATR battery-backed power system conducted this year, included a review of documents, training status, and performance. DOE-ID also conducted independent verification that implementation of controls for PISAs identified at the ATR included lists of specific controls and concluded that the contractor had performed the actions adequately. The documentation for a 2011 shadow assessment of the contractor readiness assessment at MFC for the fuel receipt from INTEC using the Hot Fuel Examination Facility (HFEF)-6 cask was found to sufficiently address the

details of the activity (objective, approach, and discussion) to support the conclusions. Overall, reports were clearly written and provided assessment criteria, details, references, and conclusions. Reports were submitted to the contractor for factual accuracy prior to being issued.

Independent Oversight also reviewed the FY 2011 DOE-ID integrated oversight schedule for NE facilities. The schedule includes placeholders in each quarter to indicate that DSA and TSR implementation will be verified as necessary following notification that the contractor has completed implementation. The schedule also includes operational awareness activities by the FRs at each facility in each quarter. Although the schedule includes some oversight activities for contractor MSAs by the Quality Services Division and reviews of criticality safety controls, it does not include SAC or SSO assessments or assessments of implementation of specific safety basis hazard controls. (See Opportunities for Improvement, **OBS-4**.)

OPAD performs periodic verification of the performance of the safety basis hazard controls through the FR and SSO operational awareness and assessments functions. These reviews utilize inspections of the facilities, samples of documentation (such as procedure revisions), and reviews of training records to verify that safety basis hazard changes have been adequately implemented. Although not on the integrated schedule, OPAD has conducted monthly SSO awareness activities at ATR and MFC during this fiscal year. Independent Oversight reviewed a sample of SSO monthly operational awareness activities performed in 2011. The assessment reports include the objective, approach, and executive summary as well as a discussion section that typically provides a brief description of the oversight activities, which include observation of contractor activities and review of completed documents. In at least one instance, a significant issue with high efficiency particulate air (HEPA) filter testing at MFC was identified. The reports are complete and well written, but the scope and depth of the assessment activities do not fully address the safety basis controls associated with the vital safety systems at the facilities. (See opportunities for improvement, **OBS-3**.)

From 2007 through 2009, DOE-ID FR oversight of TSR surveillance testing at ATR facilities included 15 reports that typically addressed two objectives. The first objective was to verify the adequacy of TSR surveillance tracking and ensure TSR-required surveillances were being completed as required using an effective tracking mechanism. The second objective was to verify that TSR surveillance testing of safety-related equipment was conducted in a manner that ensured that safety systems are capable of performing their safety functions. These reviews were adequately documented. This type of oversight activity was modified after 2010, and oversight of TSR surveillances is currently performed on an ad hoc basis the quarter after a new or modified TSR has been implemented, as required. Only a few safety basis document changes have been implemented since this change in the approach to oversight.

In their performance of routine oversight of operations, DOE OPAD FR personnel have identified instances of inadequate performance of TSR surveillances or performance of operations that were not as described in the administrative controls. While performing a surveillance of implementation of a revised TSR at the Fuel Manufacturing Facility (FMF), the FR observed nuclear material handling in which the administrative control requiring the use of a transfer device was not being performed. This specific operation had not been included in the readiness assessment when the facility commenced operations. In another instance, during a review of BEA's independent assessment for performance of HEPA filter testing, DOE personnel noted that appropriate steps from the applicable technical standard (ANSI/ASME N510, *Testing of Nuclear Air-Treatment Systems*) were not incorporated in the procedures for in-place HEPA testing. The issue was subsequently determined to be a TSR violation. A causal analysis was performed, and the identified corrective actions led to a change in the FRM-411 implementation process.

CH2M-WG Idaho, LLC

The IVR process is implemented primarily through the FRM-579, *ICP Project Change Implementation Strategy*. Based upon interviews with nuclear facility managers and the CWI Nuclear Safety Supervisor, this process is well understood and institutionalized. Independent Oversight reviewed several FRM-579s and found that they contain sufficient detail to identify the facility's implementation activities, including affected controls, implementing documents, and training analysis. For example, the FRM-579 for the "Transfer of EBR-II Fuel to MFC using the HFEF-6 Cask" identified LST-335, *Approved Cask List LST-335 R30 for the CPP-666 Fuel Storage Area (FSA)*, as an impacted document. Review of LST-335 found that the requirements for the HFEF-6 cask with EBR-II fuel had been added appropriately to the list. Thorough evidence files, including impacted documents, tailgate attendance rosters, and employee qualifications/certifications list, supported implementation for the activity. The sample of completed FRM-579s demonstrated that the IVR process was used for SAR and TSR revisions, hazard analysis documents, and changes to approved lists (including Criticality Safety Control Lists and the Approved Cask List). Of the seven FRM-579s reviewed, only two had undergone an independent review, indicating that the independent review of FRM-579 implementation is not routinely conducted by all organizations. (See Opportunities for Improvement, **OBS-5**.)

The integrated assessment schedules for FY 2010 and FY 2011 included annual assessments for SAR-100 and TSR-100, which were accomplished through a roll-up of targeted assessments in nuclear facilities, as well as other reviews. Annual reviews of the TSR SACs are included in LST-202, *Company-Level Required Assessments*, and are included on the integrated assessment schedule. Annual SAC reviews were conducted for many of the facilities; however, the integrated assessment schedule for FY 2010 did not include the annual SAC review for five TSR documents (two were initially scheduled but were cancelled). The integrated assessment schedule for FY 2011 includes annual SAC reviews for all of the INTEC facilities, and all the assessments scheduled to the date of this review were completed.

Independent Oversight reviewed two annual SAC reviews and found that the key items identified in MCP-2449, Appendix C, were being addressed (e.g., the SAC has been implemented as intended, is effective at mitigating the hazards as intended, and operators can perform their associated tasks).

Annual reviews of SARs and TSRs are conducted by CWI at the direction of DOE-ID. The annual reviews are scheduled on a Nuclear Safety Priority List that is maintained by CWI. MCP-2449, Appendix B, *Annual Review Checklist*, includes a review of the numerous topics and is used to determine if an annual update needs to be submitted to DOE. A sampling of the completed annual review checklists determined that they were being completed as required and appropriately addressed the need for an annual update.

One notable practice is the inclusion of an annual Limiting Condition for Operation surveillance requirement (TSR-113 Surveillance Requirement 4.113.2.1) to ensure that applicable limits and controls are implemented in operating procedures or other approved documents. The control requires the nuclear facility manager to provide a compliance performance summary for the Contractor-Approved Lists (Contractor Approved Fuel List, LST-344; Contractor Approved Cask List, LST-355; and Criticality Safety Controls List, LST-366) to senior management. The performance summary is to include identification of times when a limit or control was not adequately implemented or performed and a review of relevant information such as Occurrence Reporting and Processing System (ORPS) reports and stop-work instances.

The annual review of SAR-100, *ICP Standardized Safety Analysis Report*, dated September 13, 2010, focused on the nuclear safety attributes of the configuration management of the safety management programs. The annual review did not address the individual safety management programs (e.g., criticality

safety, radiological protection, fire protection, training, and emergency preparedness), but was based upon targeted assessments in nuclear facilities and included a review of other assessment sources (e.g., DOE monthly assessment report, issues communication and resolution, ORPS, and Noncompliance Tracking System).

In addition to the safety basis reviews, CWI has verified safety basis changes through the implementation of its startup readiness reviews. Independent Oversight reviewed contractor documentation for operational readiness reviews and readiness assessments and found that they appropriately included a core requirement and a startup prerequisite to ensure that facility safety documentation that describes the safety envelope of the facility (normally DSA and TSRs) is in place, current, approved, and verified to be implemented. A review of PLN-3722, *MSA Plan for Startup of the Integrated Waste Treatment Unit*, found that the safety basis approval and implementation was appropriately considered in the prerequisites, MSA review criteria NS-1 and NS-2, and task list for nuclear safety objectives. In another example, the contractor readiness assessment for the commencement of remote-handled transuranic waste repackaging operations at CPP-666 Fluorinel Dissolution Process Area Cell, conducted in December 2009, was reviewed and found to appropriately assess the facility safety area. The assessment identified five (5) pre-start findings and one (1) post-start finding in the area of nuclear safety, with the conclusion that criterion NS-1 was not met. These results indicate a thorough review, although there may also be a need for improvement in the processes used to determine readiness.

LST-202, *Company-Level Required Assessments*, includes requirements for a management assessment of qualification and certification programs to ensure they are kept up to date and reflect changes to the facility, SARs, TSRs, procedures, regulations, and applicable industry operating experience. A number of training assessments were scheduled and completed per the FY 2010 and 2011 Integrated Assessment Schedules. MCP-33, *Personnel Qualification and Certification*, addresses the Qualification and Certification program and requirements. In addition, PDD-5, *INTEC and Waste Management Training and Administrative Support*, provides requirements with regards to the selection, qualification or certification, and training requirements for personnel involved in the operation, maintenance, and technical support of nonreactor nuclear facilities. PDD-5 addresses minimum education and experience, the qualification and certification (only applicable to the fuel group) processes, and general and specific training. The specific training for the fuel group facility operators includes authorization basis documents and safety systems.

FRM-579, *ICP Project Change Implementation Strategy*, includes a training analysis section, which had been completed on all of the FRM-579s reviewed. For example, FRM-579 for "CPP-603-IFSF, LST-331 Revision to Address an Exception for Storing a Single Sealed Failed Fuel Can," included the completed training request form, the required reading draft e-mail, and the required reading report showing that 18 employees completed the reading. The training analysis section of FRM-579 for "INTEC Fluorinel and Storage Facility (FAST) CPP-666, Transfer of EBR-II Fuel to MFC using the HFEF-6 Cask," indicated that tailgate training would be required prior to field operations. The evidence notebook included a copy of the tailgate training instructional material for EBR-II fuel transfers and a list showing attendance.

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Independent Oversight reviewed several FRM-411 document packages that were used for the implementation of safety basis document changes. For changes to safety basis controls, the FRM-411 procedure adequately addresses the elements necessary for successful implementation. The contractor's FRM-411 adequately addresses training elements in the implementation of the safety basis changes. The FRM-411 procedure requires the implementation coordinator to identify any Conditions of Approval in the DOE Safety Evaluation Report. In the last two years, there were no Conditions of Approvals identified in the FRM-411. The 2011 ATR Critical Facility SAR and TSR revision included editorial

changes and updated references, but made no changes to the hazards analysis or controls. BEA used the FRM-411 procedure to update the documentation.

BEA conducts independent assessments of safety system performance, and verifies through periodic surveillances and assessments that personnel are trained and qualified: however, BEA does not have an overall schedule to periodically verify or re-verify the implementation of the safety basis hazard controls in the TSRs, such as SACs and design features. (See Opportunities for Improvement, **OBS-6**.)

BEA has performed some independent assessments of the safety basis hazard controls. Independent Oversight reviewed a sample of independent assessments of safety system performance completed at ATR and MFC. The independent reviews, which were conducted by a team of qualified personnel, comprehensively evaluated each line of inquiry by performing personnel interviews, document reviews, and field observations. The results were thoroughly documented on the line of inquiry field worksheets, and detailed information was provided in the comment section of the worksheets. Issues were identified for gaps in the ability to meet current requirements, and recommendations were identified for items that were not considered an "issue" in meeting current practices or current safety basis requirements. Areas for improvement were appropriately entered into the tracking system.

In at least one instance, review of safety basis documents for annual updates has resulted in the identification of errors in the hazard controls. For example, while conducting a review of the Nuclear Materials Inspection & Storage (NMIS) Facility Safety Analysis Report (January 2011), a BEA criticality safety engineer identified a discrepancy between inventory and approved documentation. A TSR violation was declared and ORPS and Noncompliance Tracking System reports issued. The causal analysis determined that the change review process in April 2003 was not as robust as the current process (FRM-411), and the contractor believes that the current process would have identified the difference before declaring the changes implemented. Although there had been six revisions to that chapter in seven years, the change review requirement had not been changed.

5.0 CONCLUSIONS

Overall, the operations office and contractors have established and implemented suitable procedures and processes to verify the implementation of safety basis hazard controls. In addition, although some opportunities for improvement were identified, the processes that the operations office and contractors have established are intended to ensure that safety basis hazard controls are maintained.

The following sections detail the Phase 1 conclusions of the Independent Oversight review of the implementation verification processes used by the oversight, management, and operating, entities of the Idaho Site.

DOE Idaho Operations Office

Overall, DOE-ID has established and implemented a suitable set of procedures and processes to verify the implementation of safety basis hazard controls at the site's nuclear facilities, although some opportunities for improvement were identified. DOE-ID independent review of contractor implementation of new or revised safety basis hazard controls is adequately addressed in the work instruction on safety basis review and approval, which is being revised to provide additional direction for performing the independent IVR. DOE-ID has also established suitable processes for planning and conducting oversight of the contractor's ongoing implementation of safety basis hazard controls and has put in place an adequate procedure to execute its responsibilities during the startup and restart of nuclear facilities. DOE-ID has appropriately conducted independent IVRs following notification that the contractor has implemented the approved

TSR changes. The DOE-ID EM assessment schedules are mostly complete, and SSO and SAC assessments have been completed as scheduled. OPAD has conducted monthly SSO awareness activities at ATR and MFC this fiscal year. Review of assessments recorded in the electronic database found evidence of the methods and approaches used for the assessments and adequate support for the conclusions.

Notwithstanding the above, some opportunities for improvement were identified during the review. Although the DOE-ID EM assessment schedule is mostly complete, it does not specifically address periodic verification of all the safety basis hazard controls, such as the facility design features. Further, the DOE-ID NE assessment schedule does not include SAC or SSO assessments or assessments of implementation of specific safety basis hazard controls.

DOE-ID has recently made organizational changes to consolidate responsibility for oversight of safety basis implementation. This consolidation of responsibility, together with the enhancements in the governing work instructions and the improvement in the scope and consistency of the independent implementation reviews by DOE-ID personnel, represents positive change that should be continued for both OPAD and NSP.

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CWI has established and implemented appropriate processes to confirm that safety basis hazard controls are in place following approval of new or revised safety basis documents and that these processes are well understood and institutionalized. CWI has an adequate procedure for developing and implementing assessments. The annual integrated assessment schedule includes a variety of assessment types and addresses the requirements to maintain the safety management programs listed in TSR-100. In addition, CWI schedules and performs an effectiveness review of the SACs as part of the annual update review of the SAR and TSR. The processes for startup and restart of nuclear facilities are appropriately addressed in the governing CWI procedure, which makes reference to the IVR process and states that a successful IVR may be a prerequisite to the start of a readiness review. The MSA process also appropriately addresses the implementation of safety basis requirements as a prerequisite to readiness. CWI has adequately implemented the annual assessments of SAC implementation, although some facilities were missed in 2010. In addition to the safety basis reviews, CWI has verified safety basis changes through implementation of its startup readiness reviews. Although the procedure for developing and implementing assessments can potentially be comprehensive, the procedure does not address a full review of the hazard controls in the TSR and contractor-approved lists over a specific period of time.

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BEA uses a checklist-based document to provide a written plan for the implementation of new or revised safety basis hazard controls. Although the document is listed as a form, it provides a detailed procedure to address the functional areas that are potentially impacted by the change. The review of several completed document packages provided evidence that the changes to safety basis controls were adequately addressed. BEA has also implemented a suitable procedure to govern the development of assessment activities and assurance schedules, and an appropriate suite of procedures to provide instructions for each of the assessment activities. BEA adequately implements the startup and restart process for nuclear facilities through a procedure (MCP-9902) that documents whether the changes require an MSA, operational readiness review, or readiness assessment. BEA also uses a specific procedure to govern the conduct of MSAs to confirm readiness for startup or restart of a facility or activity. The MSA procedure describes the process for managers to independently confirm readiness and addresses planning, conducting, and documenting the MSA. In accordance with the assessment schedule, BEA performs periodic independent safety system assessments to review system operability, reliability, and material condition. The independent reviews comprehensively evaluated each line of inquiry by

performing personnel interviews, document reviews, and field observations, and the results were thoroughly documented. However, BEA does not have an overall schedule to periodically verify or re-verify the implementation of the safety basis hazard controls in the TSRs, such as SACs and design features.

6.0 OPPORTUNITIES FOR IMPROVEMENT

During the review, Independent Oversight identified several issues, most of them representing opportunities for improvement. These issues are characterized in accordance with the DOE-ID procedure on contract oversight and are annotated in the report by level and number (for example, OBS-1). The DOE-ID oversight process identifies issues as concerns, findings, or observations. An observation represents a "situation that is presently in conformance with requirements but has the potential for future problems, deficiencies, failures, or adverse conditions, etc., based upon the assessor's judgment." A finding is a "failure to perform a specified action contrary to specific requirements" and can be based on requirements that "range from laws to contractor facility level procedures that if left unchecked could result in an adverse condition or outcome." Observations closely approximate opportunities for improvement, which according to Independent Oversight protocols are "suggestions offered by the Independent Oversight appraisal team that may assist line management in identifying options and potential solutions to various issues identified during the conduct of the appraisal." The opportunities for improvement are summarized below and are provided to DOE-ID for evaluation and follow-up in accordance with site procedures and processes.

Specific opportunities for improvement identified during the conduct of this review are as follows:

DOE Idaho Operations Office

OBS-3: To continue to strengthen the DOE-ID safety basis hazard control implementation oversight process for NE facilities, consider:

- Expanding the oversight schedule to include periodic verification of SAC implementation.
- Increasing the depth and scope of SSO reviews to include verification that surveillance tests of safety systems and components continue to demonstrate operability of the hazard controls.
- Including periodic verification that design features are being appropriately inspected and tested.
- Tracking the review of TSR surveillance tests to ensure that each test is verified periodically.

OBS-4: To further improve the DOE-ID oversight process for EM facilities, consider including periodic verification that design features are being appropriately inspected and tested, while continuing to track the review of all TSR surveillance tests to ensure that each test is verified periodically.

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OBS-1: Consider expanding the annual integrated assessment schedule to include a review of all the TSR hazard controls, such as surveillance tests and design features, over time.

OBS-5: Evaluate whether the independent review of the FRM-579 is being performed appropriately.

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OBS-2: Evaluate the potential to strengthen the startup and restart process by including specific steps in the readiness MSA procedure to validate the safety basis hazard control implementation.

OBS-6: In order to ensure that safety basis hazard controls remain in place over time, develop and implement an overall schedule for the periodic verification that safety systems, design features, and administrative controls continue to perform their safety functions.

7.0 FOLLOW-UP ITEMS

This assessment identified one item for follow-up by Independent Oversight. As noted in the Scope section, the remaining objectives in HSS CRAD 45-39, which address the effectiveness of the IVR and independent oversight processes, require observation of various safety basis hazard control implementation and IVR activities. These activities will be completed in Phase 2 of this review.

Appendix A
Supplemental Information

Dates of Review

Onsite Review: September 12-23, 2011

Office of Health, Safety and Security Management

Glenn S. Podonsky, Chief Health, Safety and Security Officer
William A. Eckroade, Principal Deputy Chief for Mission Support Operations
John S. Boulden III, Director, Office of Enforcement and Oversight
Thomas R. Staker, Deputy Director for Oversight
William Miller, Deputy Director, Office of Safety and Emergency Management Evaluations

Quality Review Board

William Eckroade
John Boulden
Thomas Staker
William Miller
Michael Kilpatrick
George Armstrong
Robert Nelson

Independent Oversight Site Lead for the Idaho Site

Aleem Boatright

Independent Oversight Reviewers

Aleem Boatright - Lead
Joseph Drago
David Odland
Terry Olberding

Appendix B
Documents Reviewed and Interviews

Documents Reviewed

- 01.OD.01, Functions, Responsibilities and Authorities, Rev. 5, 12/20/10
- 03.WI.04.10, Verification of Readiness to Startup or Restart Nuclear Facilities, Rev. 6, 9/22/10
- 03.WI.01.04, Safety Basis Review and Approval, Rev. 5, 9/13/10
- 03.WI.04.02, Conduct of Oversight Activities, Rev. 7, 7/11/11
- 09.OD.07, Safety System Oversight Program, Rev. 4, 3/22/11
- 03.PD.04, Contract Oversight, Rev. 8, 6/24/11
- 03.WI.04.01, Oversight Planning and Scheduling, Rev. 3, 7/13/11
- EM-ICP Three Year Assessment Schedule FY-2011, 9/2/10
- DOE-ID Environmental Management Program Three Year Assessment Schedule, 9/8/09
- REP-EM-1/31/2011-16726, VSS Surveillance of the AMWTP Criticality Incident Detection and Alarm System (CIDAS), 1/11
- REP-EM-6/30/2011-14964, Perform SSO Surveillance of Safety Significant BBWI Assay Equipment, 6/11
- REP-EM-7/28/2010-82340, SSO Assessment/Surveillance of the AMWTP Fissile Tracking System Interlocks, 7/10
- REP-ID-1/21/2009-52088, New Waste Calcining Facility (NWCF) Revised Document Safety Analysis, SAR/TSR-103, Rev. 6, 1/21/09
- REP-EM-3/31/2009-59462, FMDP – Authorization Basis Implementation – 3rd Quarter, FY-09, 3/31/09
- REP-EM-5/7/2009-68340, AMWTP TSR Implementation, 5/7/2009
- REP-EM-6/17/2009-77594, RWMC DSA/TSR Implementation Incorporation of (SBS) JCO-106, 6/17/09
- REP-EM-6/29/2009-16869, FMDP – Authorization Basis Implementation – 4th Quarter FY-09, 6/29/09
- REP-EM-8/5/2009-99546, CWI DSA/TSR Implementation (Level of Knowledge), 8/5/09
- REP-EM-1/6/2010-85886, SAR-112 Rev. 6 TSR-112 Rev. 5 Implementation Assessment, 1/6/2010
- REP-EM-1/25/2010-33080, SAR-114 Revision 14 and TSR-114 Revision 6 Implementation Assessment for the INTEC CPP-603 Irradiated Fuel Storage Facility, 1/25/2010
- REP-EM-1/26/2010-68335, Verification of SAR/TSR-107, Revision 6 Implementation for INTEC Tank Farm Facilities, 1/26/10
- REP-EM-2/1/2010-97346, RWMC DSA/TSR Implementation, 2/1/10
- REP-EM-2/16/2010-8835, Verification of SAR/TSR-103 Revision 8 Implementation for the New Waste Calcining Facility and the Fluorinel Dissolution Process Area, 2/16/10
- REP-EM-6/3/2010-80400, AMWTP DSA/TSR Implementation, 6/3/10
- REP-EM-3/29/2011-32036, Verify Completion of Implementation of the Safety Basis for Safety Analysis Report (SAR)-4, Revision 17 and Technical Safety Requirements (TSR)-4, Revision 9 Annual Updates, 3/29/11
- REP-EM-5/5/2011-83077, Review of Implementation of AMWTP DSA (Rev. 7) and TSR (Rev. 10)
- REP-EM-7/27/2011-37932, Implementation Verification Review of the Safety Basis for Safety Analysis Report (SAR)-103, Addendum A, Revision 5 Annual Update, 7/27/11
- REP-EM-7/28/2011-60090, Review of Implementation of the AMWTP ESS for the Untoward Holdup in Systems 335, 345, and 390 at AMWTF, 7/28/11
- TSR-112, Technical Safety Requirements for the Underground Fuel Storage Facility, Rev. 5, 12/17/09

- TSR-113, Technical Safety Requirements for the CPP-666 Fuel Storage Area (FSA), Rev. 8, 8/26/2010
- TSR-114, Technical Safety Requirements for the Irradiated Fuel Storage Facility (IFSF), Rev. 6, 12/23/09
- TSR-4, Technical Safety Requirements for the Radioactive Waste Management Complex, Rev. 9, 2/3/11
- TSR-103, Technical Safety Requirements for the New Waste Calcining Facility and the Fluorinel Dissolution Process Area, Rev. 8, 1/26/10
- REP-ID-5/17/2011-28283, INTEC CSSF, TFF, and PEWE Specific Administrative Control (SAC) Implementation, 5/11
- REP-EM-3/30/2011-95527, Verify TSR-114 Specific Administrative Controls for the CPP-603 Irradiated Fuel Storage Area are Performing or Capable of Performing Their Safety Functions. 3/11
- REP-EM-11/10/2010-80734, DOE-EM Assessment of the Documentation and Implementation of Specific Administrative Controls at the Idaho Site, 11/10
- REP-EM-3/23/2010-30794, Verify TSR-112 Specific Administrative Controls for the CPP-749 Underground Fuel Storage Area are Performing or Capable of Performing Their Safety Function, 3/10
- REP-OS-9/6/2011-14594, Safety System Oversight Assessment of the ATR Complex for August 2011, 9/6/11
- REP-OS-8/29/2011-26774, Safety System Oversight Assessment of the Materials and Fuels Complex for August 2011, 8/29/2011
- REP-OS-7/5/2011-59141, Safety System Oversight Assessment of the Materials and Fuels Complex for June 2011, 7/5/2011
- REP-OS-7/27/2011-62187, Safety System Oversight Assessment of the ATR Complex for July 2011, 7/27/2011
- REP-OS-7/27/2011, Safety System Oversight of the Materials and Fuels Complex for July 2011, 7/27/2011
- REP-OS-4/25/2011, Safety System Oversight of the ATR Complex for April 2011, 4/25/2011
- REP-OS-3/24/2011, Safety System Oversight of the ATR and MFC, 3/24/2011
- REP-OS-2/1/2011, Safety System Oversight of the ATR and MFC for January 2011, 2/1/2011
- REP-OS
- MCP-1176, Safety Analysis Process, 02/10/10, R11
- MCP-2449, ICP Nuclear Safety Analysis, 04/28/2010, R15
- MCP-1519, ICP Projects Requirement Change Implementation, 07/20/2011, R8
- FRM-579A, ICP Projects Change Implementation Strategy, 02/07/2011, R4
- LST-202, ICP Company-Level Required Assessments, 09/13/2011, R11
- MCP-2783, Verification of Readiness to Start Up or Restart Nuclear Facilities, 05/17/2011, R12
- MCP-1126, Performing Management Self-Assessments for Readiness, 05/28/2009, R9
- MCP-1459, Preparation of Justification for Continued Operation or Safety Basis Supplement, 03/29/2007, R1
- MCP-123, Unreviewed Safety Questions, 12/09/2010, R11
- MCP-2811, Nuclear Facility Change, 12/09/2010, R15
- MCP-1492, Technical Baseline, 12/17/2007, R1
- MCP-6402, Master Equipment List and Maintenance History, 06/16/2010, R7
- MCP-552, Performing Independent Assessments, 11/17/2008, R14
- MCP-9172, Developing, Integrating, and Implementing Assessment Schedules, 02/01/2010, R6
- PRD-5043, Operational Safety Boards, 12/04/2006, R2
- MCP-8, Performing Management Assessments and Management Reviews, 06/11/2009, R12
- MCP-33, Personnel Qualification and Certification, 03/08/11, R10

- FRM-579-SAR-103R8, Rev 0 Implementation of SAR-103, New Waste Calcining Facility and Fluorinel Dissolution Process Area (R8)
- FRM-579-SAR-103R7-CPP-666-FDPA, Rev 0 Implementation of SAR-103, New Waste Calcining Facility and Fluorinel Dissolution Process Area (R7)
- FRM-579, INTEC Fluorinel and Storage Facility (FAST) CPP-666, Transfer of EBR-II Fuel to MFC using the HFEF-6 Cask
- FRM-579, CPP-603/IFSF, LST-331 Revision to Address an Exception for Storing a Single Sealed Failed Fuel Can
- FRM-579, INTEC Balance of Plant Operations, INTEC Process Equipment Waste Evaporator System – SAR/TSR-108, R6
- FRM-579, INTEC Tank Farm Facilities, Balance of Plant Operations
- CWI Interoffice Memorandum dated 05/25/2011, subject: Operational Safety Board Meeting – May 25, 2011
- FRM-579, CPP-666/FDPA Implementation of HAD-478 Rev 0 (Fire Protection Equivalence Requirements)
- LST-10, Training Implementation Matrix for Waste Management and INTEC projects, 06/10/2010, R7
- LST-268, Nuclear Facility/Nuclear Facility Manager List, 09/21/2011, R38
- LST-331, Irradiated Fuel Storage Facility (IFSF) Approved Fuel List, 09/06/2011, R19
- LST-336, Criticality Safety Controls List for SAR-113, 08/24/2011, R13
- LST-335, Approved Cask List for the CPP-666 Fuel Storage Area (FSA), 08/24/2011, R30
- IAS11610, Inspection/Surveillance for TSR-100 Configuration Management SMP-SAR-105
- IAS10808, Configuration Management Safety Management Program Report to the ESRB, September 2010
- IAS11490, Specific Administrative Control Review for SAR-105 R2 and TSR-105R2, INTEC Calcined Solids Storage Facilities, April 7, 2011
- TSR-100, ICP Standardized Technical Safety Requirements (TSR) Document, 08/16/2011, R7
- IAS 11479, SAR-114/TSR-114 SAC Review 2011
- IAS 1127, SAR-120/TSR-120 SAC Review December 2010
- PLN-3737, ICP Sodium-Bearing Waste Treatment Project Operational Readiness Review Plan of Action, 02/14/2011, R0
- PLN-3485, Contractor Operational Readiness Review Plan of Action for the Integrated Waste Treatment Unit, 02/14/2011, R2
- PLN-3578, Contractor Readiness Assessment Plan of Action for the Remote Handled-Transuranic (RH-TRU) Waste Repackaging Operations of Lot 2-B Waste in the CPP-666, FDPA Cell, 09/08/2011, R1
- PLN-3722, Management Self-Assessment Plan for Startup of the Integrated Waste Treatment Unit, 07/28/2011, R2
- RPT-700, Contractor Readiness Assessment for the Commencement of RH-TRU Waste Repackaging Operations at CPP-666 FDPA Cell, December 2009
- PLN-2317, Contractor Readiness Assessment Report for the Change of CPP-653, 1617, 1634 and ISA to Hazard Category 2 Nuclear Facilities, 10/26/2006, R0
- ARC-SAR-107, SAR-107 Annual Review Checklist for 2010, 09/16/2010
- ARC-SAR-114, SAR-114 Annual Review Checklist, 07/12/2011
- ARC-SAR-105, SAR-105 Annual Review Checklist, 04/07/2011
- ARC-SAR-113, SAR-113 Annual Review Checklist, 07/27/2011
- ARC-SAR-103, SAR-108 Annual Review Checklist, 04/07/2011
- PDD-5, INTEC and Waste Management Training and Administrative Support, 01/27/2011, R21
- FRM-411, INL Nuclear Facility Standard Safety Basis Implementation Checklist

For (insert facility), Revision 3, 08/31/11

- FRM-411, INL Nuclear Facility Standard Safety Basis Implementation Checklist For 2011 ATRC Annual Update, Augusts 2011
- Letter S. Dunn to R. Newbry, Contract NO. DE-AC07-05ID14517 - Implementation of the 2010 Annual Update for The Idaho National Laboratory Safety Analysis Report 407, Revision 2 and Technical Safety Requirements 407, Revision 1 for the Radioactive Scrap and Waste Facility at the Materials and Fuels Complex, March 8, 2011
- FRM-411, INL Nuclear Facility Standard Safety Basis Implementation Checklist for SAR-407 Rev 2, and TSR Rev 1, 03/04/2011
- LST-587, SAR-407 and TSR-407 Nuclear Safety Basis Implementation Matrix, Rev 0, 06/11/2009
- REP-OS-7/6/2011-60830, Safety Basis Changes to: Idaho Standardized Safety Analysis (SAR) – 400, revision 4; Idaho Standardized Technical Safety Requirements (TSR) – 400, revision 3; Radioactive Scrap and Waste Facility (RSWF) Safety Analysis Report (SAR) – 407, revision 2; and RSWF TSR – 407, revision 1; dated 7/6/2011
- REP-NE-8/17/2010-16664, Review of Potential Inadequacy in the Safety Analysis (PISA) - ATR Complex-USQ-2010-607, "Application of Revised Surge Tank Level Analyses to Interim Operating Controls"
- REP-NE-3/30/2009-3486, DOE Review of PISA Interim Controls associated with ATR Complex-USQ-2009-208,"Pump Motor Room Flooding Following a Cask Drop Onto the Canal Parapet"
- REP-NE-12/3/2009-61399, DOE Hydraulic Shuttle Irradiation System Readiness Assessment Oversight
- REP-NE-5/2/2011-88798, Safety Basis Implementation – 2010 ATRC SAR/TSR Annual Update
- REP-OS-4/28/2009-94744, BEA Documented Safety Analysis and Technical Safety Requirement Implementation.
- REP-OM-6/15/2009-2397, Advanced Test Reactor Dry Transfer Cubicle Technical Safety Requirements Implementation
- REP-OM-3/4/2010-95097, Implementation of PISA Active Interim Controls at ATR Complex
- REP-OS-6/4/2010-25096, Surveillance of New or Revised Technical Safety Requirements Implementation for the Fuel Manufacturing Facility at the Materials and Fuels Complex.
- REP-OS-2/3/2011-79532, Surveillance of New or Revised Technical Safety Requirement Implementation for the ATR Battery Backed Power Systems.
- REP-OS-6/23/2011-3640, INL Implementation of New/Revised Criticality Safety Controls and Focused Facility Walkthrough
- REP-OM-6/17/2009-46369, TSR Surveillance Testing Program activities include an evaluation of the Contractor's TSR Surveillance Testing Program at NMIS.
- REP-OM-3/25/2009-4402, TSR Surveillance Testing Program activities include an evaluation of the Contractor's TSR Surveillance Testing Program at the Hot Fuel Examination Facility.
- REP-OM-3/17/2009-8623, TSR Surveillance Testing Program at the ATR.
- REP-OM-6/2/2009-11431, TSR Surveillance Testing Program at the Advanced Test Reactor Critical Facility (ATRC)
- REP-OS-9/1/2011-50256, Shadow of the Contractor Readiness Assessment for the EBR-II Fuel Receipt from INTEC in the HFEF-6 Cask
- REP-OS-7/27/2011-62187, Safety System Oversight Assessment of Advance Test Reactor Complex for July 2011.
- REP-OS-3/7/2011-20474, Surveillance of the In-Place HEPA Filter Testing Program at the Materials and Fuels Complex.
- ORPS NE-ID—BEA-HFEF-2011-0002, Technical Safety Requirement (TSR) Violation in the Hot Fuel Examination Facility Due to Inadequate HEPA Filter Tests, Notification: 04/05/2011; Update, 07/27/2011.

- NTS-ID—BEA-MFC-2011-0003, TSR Violation in the Hot Fuel Examination Facility & Fuel Conditioning Facility due to Inadequate HEPA Filter Tests, 04/05/2011
- FRM-411, INL Nuclear Facility Standard Safety Basis Implementation Checklist For (insert facility), Revision 2, 01/24/11
- MCP-1519, ICP Projects Requirement Change Implementation, Rev 8, 07/20/2011.
- MCP-1519, ICP Projects Requirement Change Implementation, Rev 5, 03/02/2010.
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- Nuclear Facility Manager, INTEC RH-TRU Facilities