

**Office of Enterprise Assessments
Assessment of the Unreviewed Safety Question Process
as Implemented for the Integrated Waste Treatment
Unit at the Idaho Site**



September 2016

**Office of Nuclear Safety and Environmental Assessments
Office of Environment, Safety and Health Assessments
Office of Enterprise Assessments
U.S. Department of Energy**

Table of Contents

Acronyms	ii
Executive Summary	iii
1.0 Purpose	1
2.0 Scope	1
3.0 Background	1
4.0 Methodology	2
5.0 Results	3
5.1 Contractor USQ Program Documentation	3
5.2 Contractor USQ Program Implementation	3
5.3 DOE Line Management Oversight	5
6.0 Findings	5
7.0 Opportunities for Improvement	5
Appendix A: Supplemental Information	A-1
Appendix B: Key Documents Reviewed, Interviews, and Observations	B-1

Acronyms

CFR	Code of Federal Regulations
CWI	CH2M-WG Idaho, LLC
DOE	U.S. Department of Energy
DSA	Documented Safety Analysis
EA	Office of Enterprise Assessments
EM	Office of Environmental Management
FDC	Field Design Change
ICP	Idaho Cleanup Project
ID	Idaho Operations Office
IWTU	Integrated Waste Treatment Unit
OFI	Opportunity for Improvement
PEB	Project Evaluation Board
USQ	Unreviewed Safety Question

Office of Enterprise Assessments
Assessment of the Unreviewed Safety Question Process as
Implemented for the Integrated Waste Treatment Unit at the Idaho Site

EXECUTIVE SUMMARY

The U.S. Department of Energy (DOE) Office of Nuclear Safety and Environmental Assessments, within the independent Office of Enterprise Assessments (EA), conducted an independent assessment of the implementation of the Unreviewed Safety Question (USQ) process at the Integrated Waste Treatment Unit (IWTU) at the Idaho Site. This assessment specifically evaluated how the development and implementation of this process meets the requirements of 10 CFR 830.203, *Unreviewed Safety Question Process*.

Overall, Fluor Idaho, LLC, the operating contractor, has documented and implemented an effective USQ process at the IWTU. Procedures are structured to ensure a thorough process for evaluating changes to the facility, and USQ records are maintained in accordance with a clear document management program. Recent USQ determinations indicate that the program has been fully implemented and is functioning effectively. The knowledge and IWTU-specific experience of the nuclear safety analysis staff is a strength of the USQ program. One best practice was identified related to the requirement for multiple invocations of the USQ process during the progress of work. Regular assessments by qualified and knowledgeable Federal nuclear safety staff confirmed consistent engagement by the DOE field element and helped to demonstrate a healthy oversight process.

Office of Enterprise Assessments
Assessment of the Unreviewed Safety Question Process as
Implemented for the Integrated Waste Treatment Unit at the Idaho Site

1.0 PURPOSE

The U.S. Department of Energy (DOE) Office of Nuclear Safety and Environmental Assessments, within the independent Office of Enterprise Assessments (EA), conducted an independent assessment of the Unreviewed Safety Question (USQ) process as implemented for the Integrated Waste Treatment Unit (IWTU) at the Idaho Site.

EA conducted offsite planning in April 2016 and performed onsite data collection during two visits to the site, May 9–12 and June 27–July 1, 2016. This report discusses the scope, background, methodology, results, and conclusions of the review, as well as any deficiencies, findings, and/or opportunities for improvement (OFIs) identified during the review.

2.0 SCOPE

This assessment evaluated the development and implementation of the USQ program at IWTU in order to determine how the program meets the applicable requirements, and to verify its consistency with the identified safe harbor methodology used to support compliance with Title 10 of the Code of Federal Regulations (CFR) Part 830.203, *Unreviewed safety question process*. EA’s assessment consisted of an evaluation of the procedures and processes used to identify, evaluate, and resolve changes affecting the documented safety analysis (DSA) of the IWTU facility. Additionally, this assessment evaluated the effectiveness of DOE line oversight of the associated contractor USQ programs.

3.0 BACKGROUND

The EA independent assessment program is designed to enhance DOE safety and security programs by providing DOE and contractor managers, Congress, and other stakeholders with an independent evaluation of the adequacy of DOE policy and requirements, as well as the effectiveness of DOE and contractor line management performance in safety and security and other critical functions as directed by the Secretary of Energy. The EA independent assessment program is described in and governed by DOE Order 227.1A, *Independent Oversight Program*, and EA implements this program through a comprehensive set of internal protocols, operating practices, assessment guides, and process guides.

The Idaho Site includes the Idaho National Laboratory and Idaho Cleanup Project (ICP) Core (previously “AMWTP and “ICP”). The Idaho Operations Office (ID) provides direction and oversight for the design and operation of the Idaho Site nuclear facilities for the DOE Office of Nuclear Energy and Office of Environmental Management (EM). The Office of Nuclear Energy is responsible for line management of Idaho National Laboratory facilities as well as general site operations, and EM is responsible for line management of ICP Core facilities, including IWTU. The ID Assistant Manager for Nuclear and Safety Performance coordinates day-to-day oversight of IWTU and the balance of ICP Core activities, and reports directly to the ID Deputy Manager for ICP Core. Currently, Fluor Idaho, LLC (Fluor Idaho), is the primary contractor responsible for the management and operation of all ICP Core facilities. However, when this assessment began, the previous contractor, CH2M-WG Idaho, LLC (CWI), was still operating IWTU and beginning the process of transitioning responsibility for management and operation to the new contractor, Fluor Idaho, which assumed responsibility for ICP Core, including IWTU, on June 1, 2016.

The IWTU is a facility designed to employ a steam reforming chemical process to solidify the remaining liquid sodium-bearing waste that is stored in the Idaho Nuclear Technology and Engineering Center (INTEC) tank farm. The liquid waste that is to be processed comes primarily from decontamination activities and transfers from the Process Equipment Waste Evaporator tank. Until the practice ended, much of the liquid waste that was formerly in the tank farm was processed using calcining methods that preceded the steam reforming process to be implemented by IWTU. Construction of IWTU was completed in 2012, and shortly thereafter, the DSA for the facility was implemented in preparation for operating the facility.

However, since that time and throughout the startup testing and operations process, IWTU has encountered design challenges that, to date, have prevented it from beginning radiological operations. As a result of the challenges that IWTU has faced, many modifications have been made to the facility in attempts to ensure readiness for operation. Because IWTU has a fully implemented DSA, and despite the current absence of a radiological hazard, these changes and modifications have resulted in substantial use of the USQ process for the facility. In 2014 and 2015, both internal and external concerns were raised about how USQ screens and determinations were being performed and documented. As a result, CWI made changes to the USQ process in an effort to address observations and enhance its effectiveness. This assessment was timed to evaluate the current condition of the USQ program, as well as the effectiveness of the transition of responsibilities to Fluor Idaho.

4.0 METHODOLOGY

The DOE independent assessment program is described in and governed by DOE Order 227.1A. EA implements the independent assessment program through a comprehensive set of internal protocols, operating practices, assessment guides, and process guides. Organizations and programs within DOE use varying terms to document specific assessment results. In this report, EA uses the terms “deficiencies,” “findings,” and “opportunities for improvement” (OFIs), as defined in DOE Order 227.1A. In accordance with DOE Order 227.1A, DOE line management and/or contractor organizations must develop and implement corrective action plans for the deficiencies identified as findings. Any other important deficiencies that do not meet the criteria for a finding should be addressed consistent with site-specific issues management procedures.

As identified in Section 2.0, Scope, of this report and the EA Assessment Plan for this review, *Plan for the Office of Enterprise Assessments Assessment of the Unreviewed Safety Question Process as Implemented for the Integrated Waste Treatment Unit at the Idaho Site*, May – August 2016, requirements related to Title 10 of the CFR Part 830.203, as well as guidance provided by DOE Guide 424.1-1B, were considered for this assessment. Lines of inquiry for this assessment were adapted from EM Chief of Nuclear Safety Standard Review Plan, Volume 5, *Nuclear Safety Basis Program Review of TSRs, USQs and SER*.

EA examined key documents, such as system descriptions, work packages, procedures, manuals, analyses, policies, training and qualification records, and numerous other documents. EA also conducted interviews of key personnel responsible for developing and executing the associated programs and walked down the IWTU facility, focusing on the many modified structures, systems, and components that largely served to drive the use of the USQ process. The members of the EA assessment team, the Quality Review Board, and EA management responsible for this assessment are listed in Appendix A. A detailed list of the documents reviewed, personnel interviewed, and observations made during this assessment, relevant to the conclusions of this report, is provided in Appendix B.

EA has not conducted a recent assessment of the IWTU USQ process. Therefore, there were no items for follow-up evaluated during this assessment.

5.0 RESULTS

5.1 Contractor USQ Program Documentation

Criterion:

The contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility must establish and implement a[n] Unreviewed Safety Question (USQ) process that meets the requirements of 10 CFR 830.203.

The USQ program for IWTU is described in procedure MCP-123, *Unreviewed Safety Questions*. This procedure was developed by CWI; however, Fluor Idaho has continued to use MCP-123 at IWTU subsequent to contract transition. MCP-123 adequately describes a USQ process that is fully compliant with the requirements of 10 CFR 830.203. In addition, MCP-123 closely mirrors the guidance of DOE Guide 424.1-1B, which provides a sound method for complying with the regulation.

Records of USQ actions are maintained in accordance with MCP-135, *Document Management*. EA sampled a large number of USQ actions taken prior to the change in operating contractors, and verified that records of USQ actions taken by CWI were turned over to Fluor Idaho and remain available in an online document management system.

CWI had appropriately submitted annual summaries of USQ determinations to ID, as required by 10 CFR 830.203(f). The requirement is also found in MCP-123.

SAR-219, *Documented Safety Analysis for the Integrated Waste Treatment Unit*, has not been updated annually, as required by 10 CFR 830.202(c)(2). ID agreed to a phased annual review and update of the safety basis, based on the absence of radiological activities and the timing of the startup testing effort. Periodic updates that are limited in scope have been submitted by the contractor and approved by ID to ensure that actions inappropriate for the testing phase are not mandated by the Technical Safety Requirements. A number of outstanding USQs, numerous Evaluations of the Safety of the Situation addressing Potential Inadequacies in the Safety Analysis, and one Justification for Continued Operation remain elements of the safety basis following the most recent revision of SAR-219. The large number of documents which comprise the safety basis inherently increases the difficulty of correctly performing USQ actions. The contractor has recently submitted a comprehensive revision of SAR-219 to ID, and comment resolution was in progress during this assessment. Once approved, this revision should improve the condition of the safety basis. (See **OFI-IWTU-1**.)

5.2 Contractor USQ Program Implementation

Criterion:

The contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility must take actions consistent with a USQ process that meets the requirements of 10 CFR 830.203.

The IWTU has experienced a significant number of engineering changes and design modifications as a result of issues identified during startup testing. In accordance with MCP-1308, *Field Design Change*, changes in hazard category 1, 2, or 3 nuclear facilities require use of the USQ process in accordance with

MCP-123. MCP-1308 assigns responsibility for appropriate use of the USQ process to the facility Design Authority. At IWTU, System Engineers are part of the Design Authority organization.

EA reviewed field design changes (FDCs) for the previous year (over 150 in total) to determine whether the USQ process was being appropriately applied. In almost all cases, FDCs referenced the applicable USQ. The sole exception was for FDC 10689, *IWTU - Auger Grinder VFD/Motor - add dV/dT Filter*. EA interviewed the designated System Engineer, who stated that, although the Auger Grinder was located in IWTU, the variable frequency drive was actually located in a separate building, CPP-2719, the IWTU Power Distribution Center, which is not a hazard category 2 nuclear facility. EA also interviewed the Fluor Idaho Chief Engineer, who had been at IWTU previously with CWI. The Fluor Idaho Chief Engineer explained that several discussions had been held in prior years to ensure that CPP-2719 was not a hazard category 2 nuclear facility. However, MCP-1308 cites LST-268, *ICP Nuclear Facility/Nuclear Facility Manager List*, as the source for determining which facilities are considered category 1, 2, or 3 nuclear facilities. LST-268 lists CPP-2719 as a hazard category 2 structure associated with IWTU. Fluor Idaho now recognizes that a USQ should have been developed for FDC 10689.

MCP-101, *ICP Integrated Work Control Process*, requires the work planner to submit work orders to the USQ process in accordance with MCP-123. For the case of FDC 10689, work order WO 657365, *FDC 10689 Add dV/dT Filters to Auger-Grinder Motor*, was properly submitted, and USQ-16748, *IWTU - Auger Grinder VFD/Motor - add dV/dT Filter; WO 657365 FDC 10689 Add dV/dT Filter to Auger-Grinder Motor*, was properly prepared and approved.

The above example illustrates the strength of the ICP Core USQ process. As facility changes progress from design changes covered by MCP-1308 to actual modifications of a nuclear facility structure, system, or component addressed by MCP-2811, *Nuclear Facility Change*, and are finally implemented using work orders controlled by MCP-101, the USQ process is invoked at multiple steps. These steps are tracked using revisions to the applicable USQs, and the USQ title is revised to include the new documents being incorporated by that revision. In accordance with MCP-123, the USQ is revised to ensure that all applicable safety basis documents (including those issued since the prior revision of the USQ) are reviewed to ensure validity of the revised USQ. Several USQs that were reviewed as part of this assessment went through various revisions as work proceeded. EA considers the process to require multiple invocations of the USQ process during the progress of work to be a best practice.

At IWTU, all USQs are required to be prepared and evaluated by nuclear safety analysis staff. A list of qualified preparers and evaluators is available electronically from the ICP Core internal web site, and EA verified that all personnel performing preparation and evaluation of USQs had current qualifications. During interviews with personnel involved with the preparation and evaluation of IWTU USQs, the staff asserted that the small number of qualified USQ preparers and evaluators, along with their close physical proximity, promoted shared learning and helped to overcome any perceived disadvantage associated with the current safety basis documentation. Additionally, the nuclear safety analysis staff created a consolidated electronic document to enable single-source searching for the multiple documents that comprise the current safety basis. The depth of experience of the current IWTU nuclear safety analysis staff is a major strength of the USQ process.

EA also reviewed multiple independent self-assessment reports generated by the contractor over the past year, which evaluated the USQ process and the effectiveness of other processes and procedures connected with the USQ process. The Project Evaluation Board (PEB), an independent group established by CWI that is not directly associated with the operation of any one ICP facility, was responsible for conducting these evaluations. In each case, the PEB assessments provided valuable observations to enhancing the effectiveness of the USQ process as implemented at IWTU. EA observed that Fluor Idaho has continued to charter the PEB for the management and operation of ICP Core.

5.3 DOE Line Management Oversight

Criterion:

DOE Line Management shall evaluate contractor programs and management systems for effectiveness of performance (including compliance with requirements). Such evaluations must be based on the results of operational awareness activities; assessments of facilities, operations, and programs; and assessments of the contractor's assurance system. Evaluations shall meet the requirements of DOE Order 226.1B.

EA reviewed ID evaluations performed over the last year of the USQ process implemented for IWTU and interviewed ID and contractor staff. Included in the ID evaluations are reviews of the contractor's annual USQ Determination Summary Report. EA reviewed ID's 2014 and 2015 evaluations. Upon receiving the report, ID nuclear safety specialists randomly sample the contractor's USQ determinations (approximately 10 percent) to evaluate the adherence to the approved USQ process. The reports documenting these reviews show that by stepping through the approved MCP-123 procedure, ID uses a reasonable methodology and appropriate rigor in assessing the contractor's performance.

In addition to the reviews of the summary reports, ID has performed IWTU-specific evaluations related to the implementation of the USQ process. Each of these evaluations, and any associated observations, issues, or findings, have been entered into the PEGASUS issues management system and have been appropriately tracked. Multiple completed assessments, with documented and tracked results, demonstrate that ID is routinely evaluating the effectiveness of the USQ process for IWTU in accordance with their oversight responsibilities as detailed in DOE Order 226.1B, *Implementation of Department of Energy Oversight Policy*. Additionally, contractor staff indicated that MCP-123 was revised in response to comments from previous ID evaluations. Contractor staff also stated that oversight by ID helped improve the USQ process, which is further evidence of a healthy oversight program.

6.0 FINDINGS

EA identified no findings during this assessment.

7.0 OPPORTUNITIES FOR IMPROVEMENT

EA identified one OFI to assist cognizant managers in improving programs and operations. While OFIs may identify potential solutions to findings and deficiencies identified in appraisal reports, they may also address other conditions observed during the appraisal process. EA offers this OFI only as a recommendation for line management consideration; it does not require formal resolution by management through a corrective action process and is not intended to be prescriptive or mandatory. Rather, it is a suggestion that may assist site management in implementing best practices or provide potential solutions to issues identified during the assessment.

Fluor Idaho

OFI-IWTU-1: Consider monitoring the growing number of documents that comprise the safety basis of the IWTU facility, and then administratively controlling when the DSA should be revised to prevent added challenges to effectively implementing the USQ process.

Appendix A Supplemental Information

Dates of Assessment

Onsite Assessment: May 9-12 and June 27 – July 1, 2016

Office of Enterprise Assessments (EA) Management

Glenn S. Podonsky, Director, Office of Enterprise Assessments
William A. Eckroade, Deputy Director, Office of Enterprise Assessments
Thomas R. Staker, Director, Office of Environment, Safety and Health Assessments
William E. Miller, Deputy Director, Office of Environment, Safety and Health Assessments
Patricia Williams, Director, Office of Worker Safety and Health Assessments
Gerald M. McAteer, Director, Office of Emergency Management Assessments

Quality Review Board

William A. Eckroade
John S. Boulden III
Thomas R. Staker
William E. Miller
Patricia Williams
Gerald M. McAteer
Michael A. Kilpatrick

EA Site Lead for the Idaho Site

Alem E. Boatright

EA Assessors

Alem E. Boatright – Lead
Gregory D. Teese

Appendix B Key Documents Reviewed, Interviews, and Observations

Documents Reviewed

- Integrated Waste Treatment Unit (IWTU) Safety Basis Change Log, updated 5/4/16
- Organization Chart - Fluor Idaho, May 6, 2016
- Organization Chart - Integrated Waste Treatment Unit, June 7, 2016
- Safety Evaluation Report - Revision 1, *Documented Safety Analysis and Technical Safety Requirements (SAR-219 Rev 3 / TSR-219 Rev 0) for the Integrated Waste Treatment Unit (CPP-1696) at the Idaho Nuclear Technology and Engineering Center*, February 2011
- Safety Evaluation Report - Revision 1, Addendum A, *Documented Safety Analysis for the Integrated Waste Treatment Unit (CPP-1696) Sodium Bearing Waste Treatment (SAR-219 Rev 4 / TSR-219 Rev 1) at the Idaho Nuclear Technology and Engineering Center*, November 2011
- Safety Evaluation Report - Revision 1, Addendum B, *Documented Safety Analysis for the Integrated Waste Treatment Unit (CPP-1696) Sodium Bearing Waste Treatment (SAR-219 Rev 5 / TSR-219 Rev 2) at the Idaho Nuclear Technology and Engineering Center*, April 2012
- Safety Evaluation Report - Revision 1, Addendum C, *Documented Safety Analysis for the Integrated Waste Treatment Unit (CPP-1696) Sodium Bearing Waste Treatment (SAR-219 Rev 6 / TSR-219 Rev 3) at the Idaho Nuclear Technology and Engineering Center*, May 2012
- Safety Evaluation Report - Revision 1, Addendum D, *Justification for Continued Operation (JCO-108) for Accessing Upper Packaging Cell 1 Without Draining the Product Receiver Filter Supporting Integrated Waste Treatment Unit Recovery from Filter Blinding Event (USQ-12454) at the Idaho Nuclear Technology and Engineering Center*, August 2012
- Safety Evaluation Report - Revision 1, Addendum E, *Justification for Continued Operation (JCO-109) for Removal of Carbon Fines from Adsorber Dead Leg Supporting Integrated Waste Treatment Unit Recovery from Filter Blinding Event (USQ-12454) at the Idaho Nuclear Technology and Engineering Center*, September 2012
- Safety Evaluation Report - Revision 1, Addendum F, *Evaluation of the Safety of the Situation (ESS-113) for Integrated Waste Treatment Unit Off-gas Filter Blinding Event (USQ-12454) at the Idaho Nuclear Technology and Engineering Center*, October 2012
- Safety Evaluation Report - Revision 1, Addendum G, *Evaluation of the Safety of the Situation (ESS-114) for Integrated Waste Treatment Unit Safety Significant Rupture Disk Performance During IWTU Heatup (USQ-12949) at the Idaho Nuclear Technology and Engineering Center*, February 2013
- Safety Evaluation Report - Revision 1, Addendum H, *Revision 1 to the Justification for Continued Operation (JCO-109) for Removal of Carbon Fines from the Mercury Adsorber as part of Integrated Waste Treatment Unit Recovery from the Startup Filter Blinding Event at the Idaho Nuclear Technology and Engineering Center*, March 2013
- Safety Evaluation Report - Revision 1, Addendum I, *Evaluation of the Safety of the Situation (ESS-115) for the Integrated Waste Treatment Unit Granular Activated Carbon (GAC) Bed Flow New Information Unreviewed Safety Question (USQ-13324) at the Idaho Nuclear Technology and Engineering Center*, June 2013
- Safety Evaluation Report - Revision 1, Addendum J, *Evaluation of the Safety of the Situation (ESS-117) for the Integrated Waste Treatment Unit Four PISA Related USQ Determinations (USQ-13396/13398/13433/13493) at the Idaho Nuclear Technology and Engineering Center*, September 2013
- Safety Evaluation Report - Revision 1, Addendum K, *Documented Safety Analysis for Integrated Waste Treatment Unit (CPP-1696) Sodium Bearing Waste Treatment (SAR-219 Rev 7/TSR-219 Rev 4) at the Idaho Nuclear Technology and Engineering Center*, September 2013

- Safety Evaluation Report - Revision 1, Addendum L, *Editorial Change for Technical Safety Requirements for Integrated Waste Treatment Unit(CPP-1696) Sodium Bearing Waste Treatment (SAR-219 Rev 7 / TSR-219 Rev 4) at the Idaho Nuclear Technology and Engineering Center, November 2013*
- Safety Evaluation Report - Revision 1, Addendum M, *Justification for Continued Operation (JCO-110) for Performance of TI-102 with Valve HV-SRB-365-007 Inoperable (USQ-12454) at the Idaho Nuclear Technology and Engineering Center, July 2014*
- Safety Evaluation Report - Revision 1, Addendum N, *Justification for Continued Operation (JCO-111) for Startup Test Operations with Reduced Cell Access Restrictions at the Idaho Nuclear Technology and Engineering Center, August 2014*
- Safety Evaluation Report - Revision 1, Addendum O, *Evaluation of the Safety of the Situation (ESS-123) for the Integrated Waste Treatment Unit TSR-219 AC 5.219.4 Access Restrictions New Information Unreviewed Safety Question (USQ-15128) at the Idaho Nuclear Technology and Engineering Center, September 2014*
- Safety Evaluation Report - Revision 1, Addendum P, *Evaluation of the Safety of the Situation (ESS-124) for the Integrated Waste Treatment Unit Inadequacy Related to the Waste Feed Pump Cutoff Circuit New Information Unreviewed Safety Question (USQ-15263) at the Idaho Nuclear Technology and Engineering Center, November 2014*
- Safety Evaluation Report - Revision 1, Addendum Q, *Documented Safety Analysis and Technical Safety Requirement Revisions for the Integrated Waste Treatment Unit Integrated Startup Testing and Sodium Bearing Waste Treatment (SAR-219 Rev 8/TSR-219 Rev 5) at the Idaho Nuclear Technology and Engineering Center, December 2014*
- Safety Evaluation Report - Revision 1, Addendum R, *Evaluation of the Safety of the Situation (ESS-125) for the Integrated Waste Treatment Unit Safety Significant Pressure Relief Valves and Rupture Disks New Information Unreviewed Safety Question (USQ-15515) at the Idaho Nuclear Technology and Engineering Center, April 2015*
- Safety Evaluation Report - Revision 1, Addendum S, *Safety Basis Supplement for Carbon Reduction Reformer Refractory Repair Dry Out (JCO-112) at the Idaho Nuclear Technology and Engineering Center, May 2015*
- Safety Evaluation Report - Revision 1, Addendum T, *Evaluation of the Safety of the Situation (ESS-126) for the Integrated Waste Treatment Unit Confinement Safety Issues New Information Unreviewed Safety Questions (USQ-15570 and USQ-16051) at the Idaho Nuclear Technology and Engineering Center, June 2015*
- Safety Evaluation Report - Revision 1, Addendum U, *Evaluation of the Safety of the Situation (ESS-127) for the Integrated Waste Treatment Unit Process Confinement Area Structural Temperatures New Information Unreviewed Safety Question (USQ-16070) at the Idaho Nuclear Technology and Engineering Center, July 2015*
- Safety Evaluation Report - Revision 1, Addendum V, *Evaluation of the Safety of the Situation (ESS-128) for the Integrated Waste Treatment Unit Process Carbon Dust Combustion Parameters New Information Unreviewed Safety Question (USQ-16195) at the Idaho Nuclear Technology and Engineering Center, July 2015*
- Safety Evaluation Report - Revision 1, Addendum W, *Justification for Continued Operation (JCO-113) for Upper Packaging Cell 0 Access during Warm Standby Mode at the Idaho Nuclear Technology and Engineering Center, July 2015*
- Safety Evaluation Report - Revision 1, Addendum X, *Documented Safety Analysis and Technical Safety Requirement Revisions for the Integrated Waste Treatment Unit Integrated Startup Testing and Sodium Bearing Waste Treatment (SAR-219 Rev 9/TSR-219 Rev 6) at the Idaho Nuclear Technology and Engineering Center, August 2015*
- Safety Evaluation Report - Revision 1, Addendum Y, *Evaluation of the Safety of the Situation (ESS-130) for the Integrated Waste Treatment Unit PRF Filter Element Failure (Post FDC*

- 10285)(USQ-16590), and Inadequate Controls Derived for IWTU Deflagration Events (USQ-16668) Idaho Nuclear Technology and Engineering Center, November 2015
- Safety Evaluation Report - Revision 1, Addendum Z, *Evaluation of the Safety of the Situation (ESS-129) for the Integrated Waste Treatment Unit Seismic Interaction at IWTU (USQ-16403)* Idaho Nuclear Technology and Engineering Center, January 2016
 - Safety Evaluation Report - Revision 1, Addendum AA, *Evaluation of the Safety of the Situation (ESS-132) for the Integrated Waste Treatment Unit Isolated Process Off-Gas Component Over-Pressurization and Breach for Nitrogen Purges Not Analyzed (USQ-17041)* Idaho Nuclear Technology and Engineering Center, April 2016
 - CCN 317357, Contract No. DE-AC07-05ID14516 - *Summary of Unreviewed Safety Question Determinations Completed During Calendar Year 2014*, January 26, 2015
 - CCN 318727, Contract No. DE-AC07-05ID14516 - *Summary of Unreviewed Safety Question Determinations Completed During Calendar Year 2015*, January 20, 2016
 - ESS-119, *Evaluation of the Safety of the Situation for Inadequate Basis for Not Controlling Cell Delta Pressure Instrumentation Isolation Valves Issue*, Rev. 0, December 18, 2013
 - ESS-123, *Evaluation of the Safety of the Situation for Potential Inadequacy of TSR-219 AC 5.219.4 Access Restrictions During Shutdown Mode at IWTU*, Rev. 0, October 2, 2014
 - ESS-125, *Evaluation of the Safety of the Situation for Integrated Waste Treatment Unit (IWTU) Safety Significant Pressure Relief Valves and Rupture Disks*, Rev. 0, June 10, 2015
 - ESS-126, *Evaluation of the Safety of the Situation for Integrated Waste Treatment Unit (IWTU) Inadequate Functional Requirements and Performance Criteria Identified for Safety Significant Process Off-gas System Isolation Valves and Unanalyzed Events Resulting in Process Material Accumulating in the IWTU Sample Cell (Outside Process Confinement Area)*, Rev. 0, July 9, 2015
 - ESS-127, *Evaluation of the Safety of the Situation for Integrated Waste Treatment Unit (IWTU) Process Confinement Area Concrete Delta Temperature PISA*, Rev. 0, July 11, 2015
 - ESS-128, *Evaluation of the Safety of the Situation for the Updated IWTU PGF Autoignition Temperature and Minimum Ignition Energy*, Rev. 0, July 11, 2015
 - ESS-129, *Evaluation of the Safety of the Situation for Seismic Interaction at IWTU (USQ-16403)*, Rev. 0, February 3, 2016
 - ESS-130, *Evaluation of the Safety of the Situation for PRF Filter Element Failure (Post FDC 10285) (USQ-16590) And Inadequate Controls Derived for IWTU Deflagration Events (USQ-16668)*, Rev. 0, November 6, 2015
 - ESS-132, *Evaluation of the Safety of the Situation for Isolated Process Off-Gas Component Over-Pressurization and Breach from Nitrogen Purges Not Analyzed (USQ-17041)*, Rev. 0, May 2, 2016
 - FDC 9625, *IWTU: Modify DMR / CRR Additive Hopper Hose Design*, March 5, 2014
 - FDC 9648, *IWTU - Canister Filling System Serapid Drive Zero Point Access Modification*, March 12, 2014
 - FDC 10181, *Update IWTU Concrete Storage Vault Drawings*, December 8, 2014
 - FDC 10192, *Add Permanent Gas Cannons (Blast Nozzles) to OGF Eductor*, December 23, 2014
 - FDC 10290, *Install New 8" Relief Line & Rupture Disc Between OGC and OGF*, April 10, 2015
 - FDC 10295, *Modify OGF Eductor Blast Nozzle System to Prevent Nozzle Plugging*, April 9, 2015
 - FDC 10333, *IWTU RSS Revisions*, April 7, 2015
 - FDC 10352, *IWTU - Change Orifice Plate on Nitrogen Feed FE-SRB-357-004*, April 2, 2015
 - FDC 10357, *IWTU Auger/Grinder Reverse Jog Feature*, April 7, 2015
 - FDC 10358, *IWTU DMR Auger Grinder Modifications*, April 7, 2015
 - FDC 10389, *Additional Modifications to the Install New 8" Relief Line Between OGC and OGF*, April 20, 2015

- FDC 10402, *Correct Dwg 634105, Sheet 8 for FDC 10295 Modify OGF Eductor Blast Nozzle*, April 23, 2015
- FDC 10414, *Modify Penthouse Ladders for Maintenance Platforms*, June 17, 2015
- FDC 10415, *IWTU Cross-Over Duct Instrumentation Relocation from N3 to N4*, May 12, 2015
- FDC 10420, *Revise Off-Gas Blower Anchor Nut Tightening Requirements*, May 11, 2015
- FDC 10427, *Install Cover Over Pipe Chase Valve Actuator*, May 12, 2015
- FDC 10428, *Update to IWTU Door Hardware Specification 08710*, May 21, 2015
- FDC 10429, *IWTU Outage E RSS Changes Rev 1*, May 18, 2015
- FDC 10433, *Revise Weld Callout on FDC 10420*, May 13, 2015
- FDC 10435, *IWTU - Add Junction Boxes for Vibration Transmitters for Blowers 240A & B and 260A & B, Ref. FDC 10388*, May 14, 2015
- FDC 10436, *IWTU COD Nozzles N3 and N7 Refractory Repair*, May 19, 2015
- FDC 10442, *Revise NOx Analyzer Flow Diagram*, May 20, 2015
- FDC 10443, *IWTU Correct Oxygen Monitors' As Built Walk Down Discrepancies*, May 27, 2015
- FDC 10449, *Install Pass Through Penetration in 109 West Wall*, May 27, 2015
- FDC 10450, *Correct CRR ATG Nozzle Labeling*, June 3, 2015
- FDC 10454, *IWTU COD Nozzles N3 Refractory Repair*, May 22, 2015
- FDC 10455, *IWTU Crossover Duct Updates*, May 30, 2015
- FDC 10458, *IWTU - Add Junction Box for TE-SRC-760-010 for FDC 10415*, May 27, 2015
- FDC 10465, *Additional Modifications to Support CRR Refractory Repairs*, June 1, 2015
- FDC 10469, *Auger-Grinder: Ceramic Housing Bushing Modification (633164, Sh 4, Detail - 001-13)*, June 11, 2015
- FDC 10476, *IWTU - Add Data Logger to NOx Monitor in CEMS Cabinet, Ref TM-FDC 10332*, June 8, 2015
- FDC 10478, *Add Remote Actuation Shafts on Process HEPA Dampers*, August 11, 2015
- FDC 10479, *Add Extra Egress Gate and Stairs on LIFT-SRH-100*, July 15, 2015
- FDC 10484, *Remove Treated Water Source from CRR*, July 31, 2015
- FDC 10485, *Provide Alternative Component Materials for Additive Airlock Valves*, June 14, 2015
- FDC 10486, *Correct AL6XN Specification Reference in Piping Materials Specification 18010*, July 6, 2015
- FDC 10489, *Additional Isolation Valves for Cross-Over Duct O2 Sample Cabinets*, June 30, 2015
- FDC 10490, *Additional Check Valves for Cross-Over Duct O2 Sample Cabinets*, June 30, 2015
- FDC 10501, *CRR Gasket Substitution for N5-N35 (minus N12) Nozzles*, June 19, 2015
- FDC 10502, *IWTU - Change in Reference Speed for BLO-SRH-240A & B and BLO-SRH-260A & B*, June 29, 2016
- FDC 10505, *Update Form Drawings for IWTU Concrete Storage Vaults*, June 30, 2015
- FDC 10507, *Auger-Grinder Shaft Guard Modification*, June 29, 2015
- FDC 10508, *Revise CRR Flange Final Bolting Torque Values - N5-N11; N13-N35 and COD - N3-N9*, June 25, 2015
- FDC 10509, *IWTU - Increase Fuse Size for FI-SRC-890-004, FI-SRC-891-004, FI-SRC-190-024 & FI-SRC-191-028 Ref: FDC 10107*, June 24, 2015
- FDC 10511, *Revise DMR and CRR Bed Level Calculation*, June 29, 2015
- FDC 10516, *IWTU - Increase Fuse Size for FI-SRC-560-016, Ref: FDC 10295, FDC 10402 & FDC 10509*, June 27, 2015
- FDC 10518, *Extend Fire Protection to Inside of the Confinement Tent*, July 29, 2015
- FDC 10521, *IWTU - Temp Mod to Install (3) New Tanks to Existing Temporary Tank Simulant Feed*, July 3, 2015
- FDC 10523, *Replace 3-Way Valves in DMR and CRR Additive Filter Systems*, July 29, 2015

- FDC 10527, *IWTU Add Filter for CRR and DMR Levels*, July 6, 2015
- FDC 10538, *IWTU Canister Storage Vaults SPC-1170 Concrete Acceptance*, July 27, 2015
- FDC 10540, *IWTU Install Additive Silos Valve Operator Assist*, September 3, 2015
- FDC 10548, *Add Zone II Coatings to Selected Areas of Rm 109 and also to Rm 115A*, July 14, 2015
- FDC 10550, *IWTU - Relocate FIT-SRB-340-005, Treated Water to Pipeline Heater Flow*, July 20, 2015
- FDC 10556, *Replace Treated Water Flow Meter*, August 24, 2015
- FDC 10559, *IWTU Add Supervisor Override to CRR/DMR Bottom Airlock Valve*, July 22, 2015
- FDC 10562, *Install Spectacle Blank on Fluidizing Nitrogen Bypass Piping*, August 31, 2015
- FDC 10574, *IWTU Modify Pressure Logic / Set Points for CRR/DMR Airlocks*, August 3, 2015
- FDC 10582, *IWTU Change in Frequency Set Point for Blowers*, August 13, 2015
- FDC 10584, *IWTU - Install IWTU Wireless Amplification System*, August 17, 2015
- FDC 10587, *IWTU - Heat Trace Clarification for TC-SRC-942-003 Controller*, August 6, 2015
- FDC 10589, *IWTU - Update Construction Drawings for Concrete Storage Vault Walls*, August 26, 2015
- FDC 10590, *Reroute PHVF and PRF Decon Drain Line*, August 24, 2015
- FDC 10591, *IWTU O2 Sensor Sediment Traps and Blowback System*, September 15, 2015
- FDC 10592, *Specify CRR Thermowell Materials*, October 13, 2015
- FDC 10593, *Modify Piping for PRC 0 to PRC 1 Cross-Connect*, October 12, 2015
- FDC 10595, *IWTU - Install Two Additional Dilution Probes*, October 6, 2015
- FDC 10601, *Material Clarification for Removal of Treated Water from CRR*, August 31, 2015
- FDC 10606, *Delete Sand Additive and Dry Film Thickness Test for Zone II on Concrete*, September 14, 2015
- FDC 10608, *IWTU Update CO Monitor Alarms*, September 8, 2015
- FDC 10612, *Temporary Mod DMR Flex Hose*, Canceled, September 1, 2015
- FDC 10614, *Install Low Point Drain in PGF Gas Outlet*, November 16, 2015
- FDC 10618, *Sheet Metal Thickness for Auger-Grinder Block Fitting Enclosure*, September 14, 2015
- FDC 10627, *Restraint System for 4-Post Tensioner*, September 17, 2015
- FDC 10628, *CRR Spectacle Blind Isolation and Fluidizing Rail Nitrogen Blow-Down*, December 3, 2015
- FDC 10630, *Delete Filling Lifting Holes on Drawings 769917 and 769918*, October 1, 2015
- FDC 10636, *Core Drilling Vault Passageway to PSB wall for FDC-10584*, October 1, 2015
- FDC 10637, *Install Low Point Drain in OGF Gas Outlet*, November 16, 2015
- FDC 10638, *Install Low Point Drain in PRF Gas Outlet*, November 17, 2015
- FDC 10639, *Install Low Point Drain in PHVF Gas Outlet*, November 13, 2015
- FDC 10641, *Sheet Metal Thickness for Auger-Grinder Block Fitting Enclosure*, Canceled, September 28, 2015
- FDC 10646, *IWTU - Clarification on Position Switch Wiring, HV-SRC-140-005, Ref. FDC-10371*, October 6, 2015
- FDC 10647, *Add Belleville Washers to Filter Hold Down System*, October 8, 2015
- FDC 10648, *IWTU - Sub Tube Sheet Assembly Plugs*, October 8, 2015
- FDC 10650, *Material Substitution for Spare PGF Captive Nut Handles*, October 15, 2015
- FDC 10651, *IWTU - Add Secondary Regulators to H2 Analyzer Cal Gas*, October 21, 2015
- FDC 10652, *Drive Shaft Material Change*, October 13, 2015
- FDC 10655, *IWTU Change Pulse Time / Logic on Filters*, October 19, 2015

- FDC 10659, IWTU - *Receptacle Relocation for IWTU Wireless Amplification System, Ref. FDC 10584*, October 20, 2015
- FDC 10660, *Modify Fabrication Detail for Additive Silo Chain Guards*, October 27, 2015
- FDC 10662, IWTU - *Add Filter Bundle Spider Gap Dimension*, October 28, 2015
- FDC 10668, *Increase Capacity of Chilled Water Pumps P-SRH-201-A and P-SRH-201-B*, November 12, 2015
- FDC 10670, IWTU - *Replace Contacts on SIF 3 Bypass Reset Switches*, November 4, 2015
- FDC 10672, *Specify Alternative Alloy for CRR Thermowell Round Bar*, November 18, 2015
- FDC 10674, IWTU - *Reroute of Rm 205 N2 Spool Piece*, November 12, 2015
- FDC 10676, *Increase PRF/PHVF Back Pulse Reservoir Capacities*, December 7, 2015
- FDC 10679, IWTU - *Permanent Work Platforms for PRF and PHVF*, December 17, 2015
- FDC 10681, *Modify Pipe Supports to Decrease Pipe Stress Loading*, February 10, 2016
- FDC 10686, IWTU - *Permanent Work Platforms for OGF and PGF*, December 17, 2015
- FDC 10689, IWTU - *Auger Grinder VFD/Motor - add dV/dT Filter*, November 19, 2015
- FDC 10692, *Auger-Grinder; End Plate Option, Nitrogen Assist Cover Plates*, November 25, 2015
- FDC 10694, IWTU - *STND-SRC-607E (Dilution Probes) Field Installation Welding*, December 15, 2015
- FDC 10697, *Install Auxiliary Pumps in Cell Sumps*, January 12, 2016
- FDC 10700, IWTU - *Add TIT-SRC-160-008 to CRR Avg Bed Temp Calculation*, January 11, 2016
- FDC 10707, IWTU - *Replace Fluorescent Stairwell Lighting with Newer Models without Battery Backup*, December 10, 2015
- FDC 10708, *Modify DMR Average and Temp. Diff. Calculations*, Canceled, December 5, 2015
- FDC 10709, IWTU *Modify DMR Average and Temp. Diff. Calculations*, December 7, 2015
- FDC 10714, *CRR Nozzle N2 Drain Enhancement* January 19, 2016
- FDC 10716, *Modification to Material Specification for Previous FDC 10591*, December 14, 2015
- FDC 10720, *Add Parallel Backflow Preventer to Demineralization System*, December 17, 2015
- FDC 10722, *DMR Auger/Grinder Nitrogen Purge Heaters*, January 7, 2015
- FDC 10730, *Apply Hardfacing Weld Overlay on DMR Fluidizing Gas Distributors*, April 5, 2016
- FDC 10731, IWTU - *Install Hardfacing on Roto-Flate Valves*, February 2, 2016
- FDC 10734, *Change Gasket Type on Fluidizing Superheater Elements*, January 11, 2016
- FDC 10735, IWTU - *Change Equipment Number on Dilution Probe System*, January 11, 2016
- FDC 10736, IWTU - *Electrical and I&C Support for Auger/Grinder Mock Up Testing*, Canceled, April 14, 2016
- FDC 10737, IWTU - *Install New Relief Valve - Instrument Air Tank*, February 3, 2016
- FDC 10738, IWTU - *Install Mass Flow Controllers to DMR Nitrogen Purges for Existing Pressure Instruments*, February 3, 2016
- FDC 10745, IWTU - *Process Cell 2 Door Modification*, March 1, 2016
- FDC 10751, *Replace Check Valve on DMR Auger/Grinder Purge Line NR-162515*, February 2, 2016
- FDC 10752, IWTU - *DMR Fluidizing Gas Distributor Nozzle Alteration*, February 2, 2016
- FDC 10755, *Add Strainer to Sample Line*, February 4, 2016
- FDC 10757, IWTU - *Replace Dilution Probe Sample Isolation Line*, February 4, 2016
- FDC 10759, IWTU *Superheater Shell Repairs*, April 18, 2016
- FDC 10761, IWTU - *DMR Ring Header Erosion Plates*, February 18, 2016
- FDC 10762, IWTU - *ValveNRV-SRC-553-141 Replacement*, February 10, 2016
- FDC 10766, IWTU - *Clarification of Grounding for FDC-10638 and 10639*, February 9, 2016

- FDC 10767, IWTU - *Change Tag Number on FDC 10637 from HV-SRC-160-016 to HV-SRC-160-019, Grounding on FDC 10614 & 10637*, February 9, 2016
- FDC 10769, *Install Finer Mesh Screen in Nitric Acid Pump Suction Line*, February 12, 2016
- FDC 10770, *Nitrogen Purge Correction*, February 18, 2016
- FDC 10774, IWTU - *Change FIT-SRC-160-015 to New Style Flowmeter, OGC Cooling Water Flowrate*, February 18, 2016
- FDC 10786, *Add Tie Rods and Spacers to Superheater Element Bundle Baffles*, February 24, 2016
- FDC 10787, IWTU *Set Position of FV-SRC-153-001 on DCS*, February 29, 2016
- FDC 10788, IWTU - *Add (6) Thermocouples to Super Heater, HTR-SRB-365*, February 25, 2016
- FDC 10789, *Modify Actuator Coupling for Valve HV-SRC-140-032*, March 3, 2016
- FDC 10790, *Modify Ladder Logic for DDS-1485, HS-H200-3B Damper Logic*, March 7, 2016
- FDC 10793, *Modify Superheater Sub-vessel Supports*, March 7, 2016
- FDC 10797, *Change Trouble On TSH-B-364-6 Gas Cannon Logic to Start When Valve Opens, Decon System Feedback Speed, and Add Nitric Acid Flow in Molarity*, March 3, 2016
- FDC 10799, IWTU - *Add CO2 Gas Piping to DMR Atomizer Nozzles and A/G Purges*, March 1, 2016
- FDC 10801, *Optional Modification for BLO-SRH-200-A/B/C Motor Base Filler Pads*, March 7, 2016
- FDC 10802, IWTU - *Lighting for CANISTER FILL/DECON #2 Cell - Rm 114*, March 7, 2016
- FDC 10804, IWTU - *Label Correction for Dwg 634109, Ref. FDC 10770*, March 15, 2016
- FDC 10805, IWTU - *Modify Heat Trace for Dilution Probes, Ref. FDC 10595*, March 7, 2016
- FDC 10806, IWTU - *Add CO2 Gas Piping to the DMR WF Nozzle Injectors and the A/G Purges*, March 23, 2016
- FDC 10808, IWTU - *Instrument Air Tank Relief Line Change*, March 7, 2016
- FDC 10810, IWTU - *Temporary NOx Monitor Installation on H2 House*, March 21, 2016
- FDC 10811, IWTU - *Temporary DMR Themocouple Installation*, March 21, 2016
- FDC 10812, *Replace DMR Sparge Ring*, April 5, 2016
- FDC 10818, *DMR 2" Sparge Ring Assembly Modification*, Canceled, March 7, 2016
- FDC 10823, *Add Multiplier FCM to FC-H-144-1*, March 24, 2016
- FDC 10827, *Change R5 RSS Logic*, March 28, 2016
- FDC 10829, IWTU - *Wiring Clarification for O2 Blowback, Ref. FDC-10591*, March 23, 2016
- FDC 10830, IWTU - *Wiring Clarification for Auger Grinder Heaters, Ref. FDC-10722*, March 23, 2016
- FDC 10831, *Repair Existing EX2 & EX3 Heater Element Bundle for HTR-SRB-365*, April 6, 2016
- FDC 10833, *Improve Material Flow Through Auger Grinder*, March 28, 2016
- FDC 10835, IWTU - *Add Steam Traps to HVAC Preheat Coil Piping*, April 20, 2016
- FDC 10836, *Modify Actuator Base for Valve HV-SRC-140-032*, March 23, 2016
- FDC 10839, IWTU - *DMR NOx Monitor System Upgrades*, March 28, 2016
- FDC 10842, *Modify Superheater Sub-vessel Support Surface Finish*, March 28, 2016
- FDC 10844, *Process Steam Filters F-SRB-164A, -164B Head O-Rings*, April 4, 2016
- FDC 10845, *Add PI and Reconcile Labels on IWTU CO2 System*, April 7, 2016
- FDC 10859, *Add Access Panel in Wall for Superheater*, April 12, 2016
- FDC 10862, *Relocate Treated Water Flow Meter*, April 14, 2016
- FDC 10863, *Correct Drawing 57060-12FI in TM-FDC 10806*, April 20, 2016
- FDC 10870, IWTU - *Clarification of Heat Trace Detail, Ref. FDC 10591 and FDC 10595*, April 13, 2016

- FDC 10871, IWTU - *Grounding Clarification and Tag Numbers Assigned for CO2 Trailer*, April 13, 2016
- FDC 10872, IWTU: *Replace Swagelok Flex Hose with Global Flex Hose*, Canceled, May 11, 2016
- FDC 10879, *Update Gasket Material on Superheater Gaskets*, April 26, 2016
- FDC 10885, IWTU - *Clarification of RTD Wiring for TC-SRC-942-003 (H2 House Heat Trace)*, May 2, 2016
- FDC 10886, IWTU - *Change Heat Trace Setpoints and RTD Placement on H2 Stand Heat Trace*, Ref. FDC 10595, May 4, 2016
- FDC 10887, IWTU - *Label NOx Monitoring System Root Isolation Valve*, May 9, 2016
- FDC 10888, *Isolate Individual Elements in EX1, EX2 on HTR-SRB-365*, May 5, 2016
- FDC 10890, *Bolting Options for Piping Connections Around Inlet to Superheater*, May 5, 2016
- Form 431.61, *ICP USQ Process Potential Inadequacy in the Safety Analysis (PISA) Form*, Rev. 5, March 10, 2016
- Form 431.62, *ICP USQ Process Proposed Change Form*, Rev. 08, March 10, 2016
- IAS1441, IWTU - *Effectiveness Assessment of Work Planning and Control Corrective Actions*, January 2014
- IAS12913, *Independent Assessment of the SAR-100/TSR-100 Implementation Procedures*, March 2014
- IAS14673, *Work Planning and Control Effectiveness Assessment*, February 2015
- IAS14843, *Independent Assessment of Unreviewed Safety Question Determinations for Fire Protection Impairments*, September 23, 2014
- IAS15773, *Independent Assessment of Procedure Review and Change Implementation*, July 2015
- JCO-111, *Justification for Continued Operation for Startup Test Operations with Reduced Cell Access Requirements*, Rev. 0, August 29, 2014
- LST-268, *ICP Nuclear Facility/Nuclear Facility Manager List*, Rev. 52, June 29, 2016
- MCP-101, *ICP Integrated Work Control Process*, Rev. 4, March 10, 2016
- MCP-123, *Unreviewed Safety Questions*, Rev. 14, March 10, 2016
- MCP-135, *Document Management*, Rev. 38, March 10, 2016
- MCP-1308, *Field Design Change*, Rev. 9, March 10, 2016
- MCP-1460, *Conduct of Engineering*, Rev. 13, April 26, 2016
- MCP-2042, *Temporary Modification Control*, Rev. 3, July 29, 2015
- MCP-2811, *Nuclear Facility Change*, Rev. 21, March 10, 2016
- MCP-3630, *Digital Instrumentation and Control System Management*, Rev. 16, March 10, 2016
- REP-EM-5/28/2015-37205, *Review a Sampling of USQ Determinations for Compliance to Approved Process*, May 28, 2015
- SAR-219, *Documented Safety Analysis for the Integrated Waste Treatment Unit*, Rev. 9, September 23, 2015
- USQ-14445, FDC 9625, *Modify DMR/CRR Additive Hopper Hose Design*, Rev. 0, March 5, 2014
- USQ-14469, FDC 9648, *Canister Filling System Serapid Drive Zero Point Access Modification*, Rev. 0, March 10, 2014
- USQ-15222, FDC 10107: *Replace Glass Tube Rotameters with Mass Flow Meters*; WO 652318: *FDC 10107: Replace Glass Tube Rotameters with Mass Flow Meters*; FDC 10165: *Removal of Shutoff Ball Valves to Flow Rotameters for the Can Fill Stations*; FDC 10509: *IWTU - Increase Fuse Size for FI-SRC-890-004, FI-SRC-891-004, FI-SRC-190-024, and FI-SRC-191-028 (Ref: FDC 10107)*, Rev. 3, June 24, 2015
- USQ-15357, FDC 10181: *Update IWTU Concrete Storage Vault Drawings*; NCR 108158: *Unpainted Steel Shims*, Rev. 0, November 10, 2014

- USQ-15390, FDC 10147: IWTU Replace CRR Oxygen Probes; FCF 8635: Replace CRR Oxygen Monitoring Equipment with Extractive Equipment; FDC 10236: IWTU Cross-Over Duct O2 Sensor Design Modification; FDC 10257: IWTU Replace CRR Oxygen Probes Nitrogen Regulator; FDC 10281: IWTU Replace CRR Oxygen Probes Material Substitution; FDC 10291: IWTU Revise Wiring AIT-SRC-760-001A from FDC 10147; FDC 10311: IWTU, FDC 10147 IRCOIWTU-C-017 Work Clarification; FDC 10411: IWTU Cross-Over Duct O2 Sensor Return Line Modification; FDC 10443: IWTU Correct Oxygen Monitors' As Built Walk Down Discrepancies, Rev. 9, May 26, 2015
- USQ-15464, FDC 10192 - Add Permanent Gas Cannons (Blast Nozzles) to OGF Eductor; FCF 8638 - Add Air Cannons to PGF, OGF, and PHVF; IDB-DBC-0427 - Add Flow Indicator and Valves; CSCF 728 - OGF Gas Cannon Control Valves; FDC 10295 - Modify OGF Eductor Blast Nozzle System to Prevent Nozzle Plugging; FDC 10402 - Correct Dwg 634105, Sheet 8 for FDC 10295; FDC 10516 - IWTU - Increase Fuse Size for FI-SRC-560-016, Ref. FDC 10295, FDC 10402 & FDC 10509, Rev. 3, June 27, 2015
- USQ-15495, New Wiper Mechanical Seal Addition to Existing Gas Seals for BLO-SRH-240-A & B and BLO-SRH-260-A & B; FCF-8650 and FCF-8523, Rev. 0, February 6, 2015
- USQ-15505, FDC 10199: Install Permanent Maintenance Platform in 2-Pack Penthouse; FCF 8649: Work Platform(s) in 2-Pack and Removable Penthouse Deck Plates; FDC 10337: Maintenance Platforms in 2-Pack Penthouse Modifications; FDC 10349: Add ASTM A240 to Material List on FDC 10199; FDC 10361: Permanent Platform Connection Changes in 2-Pack Penthouse; FDC 10414: Modify Penthouse Ladders for Maintenance Platforms, Rev. 4, June 17, 2015
- USQ-15545, FDC 10190: Reconfigure O2 Supply Connection to CRR ATG Nozzles; FCF 8644: Reconfigure O2 Supply Connections to ATG Nozzles; CSCF-724: Reconfigure O2 Supply Connections to the ATG Nozzles; IDB-DBC-0425: Add Flow Controllers to CRR O2; FDC 10394 - IWTU Modify ATG Nozzle Control Logic; CSCF 768 - Modify ATG Nozzle Control Logic; IDB-DBC-0464 - Modify Flow Controllers; IDB-DBC-0467 - ATG Nozzle Corrections; FDC 10450: Correct CRR ATG Nozzle Labeling, Rev. 3, June 3, 2015
- USQ-15545, FDC 10190: Reconfigure O2 Supply Connection to CRR ATG Nozzles; FCF 8644: Reconfigure O2 Supply Connections to ATG Nozzles; CSCF-724: Reconfigure O2 Supply Connections to the ATG Nozzles; IDB-DBC-0425: Add Flow Controllers to CRR O2; FDC 10394 - IWTU Modify ATG Nozzle Control Logic; CSCF 768 - Modify ATG Nozzle Control Logic; IDB-DBC-0464 - Modify Flow Controllers; IDB-DBC-0467 - ATG Nozzle Corrections; FDC 10450: Correct CRR ATG Nozzle Labeling; FCF 8644, Rev 1: Reconfigure O2 Supply Connections to the ATG Nozzles, Rev. 4, March 22, 2016
- USQ-15594, FCF 8655: Installation of GEN-2 DMR & CRR Additive Airlock Valves; WO 653106: DMR & CRR Airlock Valves GEN-2 Upgrade; FDC 10485: Provide Alternate Component Materials for Additive Airlock Valves, Rev. 1, June 12, 2015
- USQ-15599, FDC 10195 - Convert H2 Sampling System Temporary Modification FDC to Permanent Modification; FCF 8646 - Change H2 Sampling Jet and Flow TMOD FDC to Permanent; IDB-DBC-0437 - Add Flow Indicators and Transmitters; FDC 10587 - IWTU Heat Trace Clarification for TC-SRC-942-003 Controller, Rev. 1, August 5, 2015
- USQ-15692, TM FDC 10322: IWTU Install NOx Monitor in CEMS Cabinet; TM FDC 10397: Install Vacuum Pump on NOx Analyzer; TM FDC 10442: Revise NOx Analyzer Flow Diagram, Rev. 2, May 15, 2015
- USQ-15692, TM FDC 10322: IWTU Install NOx Monitor in CEMS Cabinet; TM FDC 10397: Install Vacuum Pump on NOx Analyzer; TM FDC 10442: Revise NOx Analyzer Flow Diagram; TM FDC 10476: IWTU Add Data Logger to NOx Monitor in CEMS Cabinet, Ref. TM FDC 10332, Rev. 3, June 5, 2015

- USQ-15795, FDC 10310: Add Solids Sampling Line; FCF-8672: Install New Sample Line; CSCF-754: Add Solid Sampling Line Valves; IDB-DBC-0447: Add Flow Indicator; FDC 10396: Correct I&C drawing 761684 for FDC 10310 - ZIO and ZIC-SRC-191-022; FDC 10427: Install Cover Over Pipe Chase Valve Actuator, Rev. 2, May 12, 2015
- USQ-15800, FDC 10290, Install New 8" Relief Line & Rupture Disc between OGC and OGF; FCF-8673, Increased Pressure Relief Capability Inlet OGF, F-SRC-160; CSCF 749, Add PSE Rupture Detection Room 111; IDB-DBC-0441, Add PSEs FOs, Rev. 0, April 10, 2015
- USQ-15800, FDC 10290, Install New 8" Relief Line & Rupture Disc between OGC and OGF; FCF-8673, Increased Pressure Relief Capability Inlet OGF, F-SRC-160; CSCF 749, Add PSE Rupture Detection Room 111; IDB-DBC-0441, Add PSEs FOs; FDC-10389, Additional Modifications to the Install New 8" Relief Line Between OGC and OGF, Rev. 1, April 17, 2015
- USQ-15885, FDC 10333 IWTU RSS Revisions; CSCF 751 - IWTU RSS Revisions, Rev. 0, April 6, 2015
- USQ-15885, FDC 10333 IWTU RSS Revisions; CSCF 751 - IWTU RSS Revisions; FDC 10429 - IWTU Outage E RSS Changes Rev 1, Rev. 1, May 15, 2015
- USQ-15887, FDC 10345: Modifications to Support CRR refractory Repairs; FDC 10436: IWTU COD Nozzles N3 and N7 Refractory Repair; FCF-8680: Repairs to CRR Refractory - Design Input, Rev. 0, May 19, 2015
- USQ-15887, FDC 10345: Modifications to Support CRR refractory Repairs; FDC 10436: IWTU COD Nozzles N3 and N7 Refractory Repair; FCF-8680: Repairs to CRR Refractory - Design Input; FDC 10454: IWTU COD Nozzles R3 Refractory Repair, Rev. 1, May 21, 2015
- USQ-15887, FDC 10345: Modifications to Support CRR refractory Repairs; FDC 10436: IWTU COD Nozzles N3 and N7 Refractory Repair; FCF-8680: Repairs to CRR Refractory - Design Input; FDC 10454: IWTU COD Nozzles R3 Refractory Repair; FDC 10465: Additional Modifications to Support CRR Refractory Repairs, Rev. 2, June 1, 2015
- USQ-15888, FDC 10352: IWTU - Change Orifice Plate on Nitrogen Feed FE-SRB-357-004, Rev. 0, April 2, 2015
- USQ-15925, FDC 10357: IWTU Auger/Grinder Reverse Jog Feature; CSCF-761: Auger/Grinder Reverse Jog Feature; IDB-DBC-0458: Add Change Tags for the DMR Auger Grinder Jog CSCF-761; FDC 10358: IWTU - DMR Auger Grinder Modifications; FCF-8677: IWTU DMR Auger Grinder Modifications; FDC 10469: Auger-Grinder: Ceramic Housing Bushing Modification (633164, Sh. 4, Detail -001-13), Rev. 1, June 11, 2015
- USQ-15925, FDC 10357: IWTU Auger/Grinder Reverse Jog Feature; CSCF-761: Auger/Grinder Reverse Jog Feature; IDB-DBC-0458: Add Change Tags for the DMR Auger Grinder Jog CSCF-761; FDC 10358: IWTU - DMR Auger Grinder Modifications; FCF-8677: IWTU DMR Auger Grinder Modifications; FDC 10469: Auger-Grinder: Ceramic Housing Bushing Modification (633164, Sh. 4, Detail -001-13); FDC 10507: Auger-Grinder Shaft Guard Modification, Rev. 2, June 27, 2015
- USQ-15979, FDC 10388: IWTU - Add Vibration Transmitters on Blowers BLO-SRH-240-A & B, BLO-SRH-260-A & B; CSCF 768: Add Vibration Transmitters on Blowers; IDB-DBC-0463: Add Vibration Transmitters on Blowers; FDC 10436: IWTU - Add Junction Boxes for Vibration Transmitters for Blow Blowers 240-A & B and 260-A & B, Ref FDC 10388, Rev. 1, May 14, 2015
- USQ-16023, FDC 10420 - Revise Off-Gas Blower Anchor Nut Tightening Requirements, Rev. 0, May 10, 2015
- USQ-16023, FDC 10420 - Revise Off-Gas Blower Anchor Nut Tightening Requirements; FDC 10433 - Revise Weld Callout on FDC 10420, Rev. 1, May 12, 2015
- USQ-16034, FDC 10415: IWTU Cross-Over Duct Instrumentation Relocation from N3 to N4; FDC 10458: IWTU - Add Junction Box for TE-SRC-760-010 for FDC 10415, Rev. 1, May 26, 2015

- USQ-16034, *FDC 10415: IWTU Cross-Over Duct Instrumentation Relocation from N3 to N4; FDC 10458: IWTU - Add Junction Box for TE-SRC-760-010 for FDC 10415; FDC 10455: IWTU Crossover Duct Updates (updates N3, N4 and N8 Blind Flanges & Bolt Material)*, Rev. 2, May 27, 2015
- USQ-16077, *FDC 10428: Update to IWTU Door Hardware Specification 08710*, Rev. 0, May 21, 2015
- USQ-16081, *FDC 10449: Install Pass Through Penetration in 109 West Wall*, Rev. 0, May 26, 2015
- USQ-16191, *FDC 10501: CRR Gasket Substitution for N5-N35 (minus N12) Nozzles (Ref NCR 108497)*, Rev. 0, June 19, 2015
- USQ-16191, *FDC 10501: CRR Gasket Substitution for N5-N35 (minus N12) Nozzles (Ref NCR 108497); FDC 10508: Revise CRR Flange Bolting Torque Values - N5-N11; N13-N35 and COD N3-N9*, Rev. 1, June 25, 2015
- USQ-16192, *FDC 10489: Additional Isolation Valves for Cross-Over Duct O2 Sample Cabinets; FDC 10490: Additional Check Valves for Cross-Over Duct O2 Sample Cabinets*, Rev. 0, June 22, 2015
- USQ-16223, *FDC 10502: IWTU - Change in Reference Speed for BLO-SRH-240A & B and BLO-SRH-260A & B*, Rev. 0, June 27, 2015
- USQ-16225, *FDC 10511: Revise DMR and CRR Bed Level Calculation*, Rev. 0, June 29, 2015
- USQ-16226, *FDC 10505: Update Form Drawings for IWTU Concrete Storage Vaults*, Rev. 0, June 30, 2015
- USQ-16245, *FDC 10521 IWTU Temp Mod to Install (3) New Tanks for Simulant Feed; WO 642927: Install Temporary Tanks for IWTU Bed Building Material (completed 2013)*, Rev. 0, July 3, 2015
- USQ-16255, *FDC 10486: Correct AL6XN Specification Reference in Piping Materials Specification 18010*, Rev. 0, July 3, 2015
- USQ-16256, *FDC 10527: IWTU Add Filter for CRR and DMR Levels; CSCF 788 Add Filter for CRR and DMR Levels*, Rev. 0, July 4, 2015
- USQ-16273, *FDC 10538: IWTU Canister Storage Vaults SPC-1170 Concrete Acceptance*, Rev. 0, July 9, 2015
- USQ-16284, *FDC 10548: Add Zone II Coatings to Selected Areas of Rm 109 and also Rm 115A; WO 655012: Paint Areas Inside IWTU for Radiological Controls*, Rev. 0, July 13, 2015
- USQ-16293, *FDC 10479: Add Extra Egress Gate and Stairs on LIFT-SRH-100*, Rev. 0, July 14, 2015
- USQ-16305, *FDC 10550: IWTU - Relocate FIT-SRB-340-005, Treated Water to Pipeline Heater Flow; FCF-8688: IWTU - Relocate FIT-SRB-340-005*, Rev. 0, July 16, 2016
- USQ-16309, *FDC 10523: Replace 3-Way Valves in DMR and CRR Additive Filter Systems; FCF 8683: DMR & CRR Additive Filter Valving Modification*, Rev. 0, July 20, 2015
- USQ-16312, *FDC 10484: Remove Treated Water Source from CRR*, Rev. 0, July 29, 2015
- USQ-16312, *FDC 10484: Remove Treated Water Source from CRR; FDC 10601: Material Clarification for Removal of Treated Water from CRR*, Rev. 1, August 31, 2015
- USQ-16312, *FDC 10484: Remove Treated Water Source from CRR; FDC 10601: Material Clarification for Removal of Treated Water from CRR; FCF 8687 Remove Cooling Water to CRR*, Rev. 2, October 27, 2015
- USQ-16319, *FDC 10559: IWTU - Add Supervisor Override on CRR/DMR Bottom Airlock Valve; CSCF 782: Add Supervisor Override to CRR/DMR Bottom Airlock Valve*, Rev. 0, July 21, 2015
- USQ-16355, *FDC 10518: Extend Fire Protection to Inside of the Confinement Tent; FCF 8696 Extend Fire Sprinkler Protection to Inside of Process HEPA Confinement Tent*, Rev. 0, July 29, 2015

- USQ-16371, *FDC 10574 IWTU Modify Pressure Logic Set Points for CRR/DMR Airlocks; CSCF 786, Rev. 0, August 3, 2015*
- USQ-16378, *FDC 10556: Replace Treated Water Flowmeter; FCF-8690: IWTU Correct Design Related Deficiencies on the Treated Water Side of the Decon System; CSCF 789: Replace Treated Water Flow Meter; IDB-DBC-0477: Treated Water Rework, FIT-SRB-340-005; PEL-DBC-0368: FDC 10556 Add & Change Valves in Decon System Treated Water Supply, Rev. 0, August 21, 2015*
- USQ-16382, *FDC 10478: Add Remote Actuation Shafts on Process HEPA Dampers, Rev. 0, August 5, 2015*
- USQ-16397, *FDC 10582: IWTU Change in Frequency Set Point for Blowers; CSCF 787 Change in Frequency Set Point for Blowers, Rev. 0, August 6, 2015*
- USQ-16403, *Seismic Interaction with Material Stored in a TAA at IWTU, Rev. 2, December 10, 2015*
- USQ-16425, *FDC 10589: IWTU - Update Construction Drawings for Concrete Storage Vault Walls, Rev. 0, August 17, 2015*
- USQ-16426, *FDC 10584: IWTU - Install IWTU Wireless Amplification System, Rev. 0, August 17, 2015*
- USQ-16426, *FDC 10584: IWTU - Install IWTU Wireless Amplification System; WO 656200 Install IWTU Wireless Amplification System; FDC 10636: Core Drilling Vault Passageway to PSB Wall for FDC 10584, Rev. 2, October 1, 2015*
- USQ-16426, *FDC 10584: IWTU - Install IWTU Wireless Amplification System; WO 656200 Install IWTU Wireless Amplification System; FDC 10636: Core Drilling Vault Passageway to PSB Wall for FDC 10584; FDC 10659: IWTU - Receptacle Relocation for IWTU Wireless Amplification System, Ref. FDC 10584, Rev. 3, October 20, 2015*
- USQ-16437, *FDC 10590: Reroute PHVF and PRF Decon Drain Line; FCF 8694: PHVF and PRF Decon Drain Reroute, Rev. 0, August 20, 2015*
- USQ-16467, *FDC 10562: Install Spectacle Blank on Fluidizing Nitrogen Bypass Piping; IDB-DBC-0478: Install Spectacle Blank, FO-SRB-365-019, Rev. 0, August 20, 2015*
- USQ-16467, *FDC 10562: Install Spectacle Blank on Fluidizing Nitrogen Bypass Piping; IDB-DBC-0478: Install Spectacle Blank, FO-SRB-365-019; FCF Install Spectacle Blank on Fluidizing Nitrogen Bypass Piping, Rev. 1, October 20, 2015*
- USQ-16489, *FDC 10540- IWTU Install Additive Silos Valve Operator Assist, Rev. 0, September 3, 2015*
- USQ-16489, *FDC 10540- IWTU Install Additive Silos Valve Operator Assist; FDC 10652: Drive Shaft Material Change, Rev. 1, October 12, 2015*
- USQ-16489, *FDC 10540- IWTU Install Additive Silos Valve Operator Assist; WO 656079: FDC 10540 Additive Silo Valve Modifications; FDC 10652: Drive Shaft Material Change; FDC 10660: Modify Fabrication Detail for Additive Silo Chain Guards, Rev. 3, October 27, 2015*
- USQ-16508, *FDC 10608: IWTU Update CO Monitor Alarms; CSCF 793: Update CO Monitor Alarms; IDB-DBC-0481 Update CO Monitor Alarms, Rev. 0, September 5, 2015*
- USQ-16510, *FDC 10606, Delete Sand Additive and Dry Film Thickness Test for Zone II on Concrete, Rev. 0, September 9, 2015*
- USQ-16525, *FDC 10591: IWTU O2 Sensor Sediment Traps and Blowback System, Rev. 0, September 11, 2015*
- USQ-16525, *FDC 10591: IWTU O2 Sensor Sediment Traps and Blowback System; FDC 10716: Modification to Material Specification for Previous FDC 10591, Rev. 1, December 10, 2015*
- USQ-16525, *FDC 10591: IWTU O2 Sensor Sediment Traps and Blowback System; FCF 8696 Install Blow-back on O2 Sample System Filters; FDC 10716: Modification to Material*

Specification for Previous FDC 10591; FDC 10829: IWTU - Wiring Clarification for O2 Blowback, Ref. FDC 10591, Rev. 3, March 22, 2016

- USQ-16533, *FDC 10618: Sheet Metal Thickness for Auger-Grinder Block Fitting Enclosure, Rev. 0, September 14, 2015*
- USQ-16537, *FDC 10593: Modify Piping for PRC 0 to PRC 1 Cross-Connect; FCF 8704: Modify Piping for PRC 0 to PRC 1 Cross-Connect; CSCF 794: Modify Piping for PRC 0 to PRC 1 Cross-Connect, Rev. 0, October 8, 2015*
- USQ-16537, *FDC 10593: Modify Piping for PRC 0 to PRC 1 Cross-Connect; FCF 8704: Modify Piping for PRC 0 to PRC 1 Cross-Connect; CSCF 794: Modify Piping for PRC 0 to PRC 1 Cross-Connect, Rev. 1, October 21, 2015*
- USQ-16552, *FDC 10627: Restraint System for 4-Post Tensioner (OGF & PGF Heads), Rev. 0, September 17, 2015*
- USQ-16554, *FDC 10595: IWTU - Install Two Additional Dilution Probes (for H2 Sample); FCF 8703: Install Two Additional Dilution Probes on the IWTU H2 Monitor; IDB-DBC-0483: H2 Dilution Probe Rework, Rev. 0, October 6, 2015*
- USQ-16554, *FDC 10595: IWTU - Install Two Additional Dilution Probes (for H2 Sample); FCF 8703: Install Two Additional Dilution Probes on the IWTU H2 Monitor; IDB-DBC-0483: H2 Dilution Probe Rework; FDC 10651: IWTU - Add Secondary Regulators to H2 Analyzer Cal Gas; IDB-DBC-0492 Add Regulators and PIs to H2 House N2 Calibration, Rev. 1, October 21, 2015*
- USQ-16554, *FDC 10595: IWTU - Install Two Additional Dilution Probes (for H2 Sample); FCF 8703: Install Two Additional Dilution Probes on the IWTU H2 Monitor; IDB-DBC-0483: H2 Dilution Probe Rework; FDC 10651: IWTU - Add Secondary Regulators to H2 Analyzer Cal Gas; IDB-DBC-0492 Add Regulators and PIs to H2 House N2 Calibration; FDC 10694: IWTU - STND-SRC-607E (Dilution Probes) Field Installation Welding, Rev. 2, December 15, 2015*
- USQ-16554, *FDC 10595: IWTU - Install Two Additional Dilution Probes (for H2 Sample); FCF 8703: Install Two Additional Dilution Probes on the IWTU H2 Monitor; IDB-DBC-0483: H2 Dilution Probe Rework; FDC 10651: IWTU - Add Secondary Regulators to H2 Analyzer Cal Gas; IDB-DBC-0492 Add Regulators and PIs to H2 House N2 Calibration; FDC 10735: IWTU - Change Equipment Number on Dilution Probe System; FDC 10805: IWTU - Modify Heat Trace for Dilution Probes, Ref. FDC 10595; IDB-DBC-0503: Modify Heat Trace, H2 House, Ref. FDC 10595, Rev. 3, March 3, 2016*
- USQ-16554, *FDC 10595: IWTU - Install Two Additional Dilution Probes (for H2 Sample); FCF 8703: Install Two Additional Dilution Probes on the IWTU H2 Monitor; IDB-DBC-0483: H2 Dilution Probe Rework; FDC 10651: IWTU - Add Secondary Regulators to H2 Analyzer Cal Gas; IDB-DBC-0492 Add Regulators and PIs to H2 House N2 Calibration; FDC 10735: IWTU - Change Equipment Number on Dilution Probe System; FDC 10805: IWTU - Modify Heat Trace for Dilution Probes, Ref. FDC 10595; IDB-DBC-0503: Modify Heat Trace, H2 House, Ref. FDC 10595, Rev. 4, March 3, 2016*
- USQ-16568, *FDC 10630 Delete Filling Lifting Holes on Drawings 769917 and 769918, Rev. 0, September 24, 2015*
- USQ-16590, *PRF Filter Element Failure (Post FDC 10285), Rev. 2, October 28, 2015*
- USQ-16598, *FDC 10646, IWTU - Clarification on Position Switch Wiring, HV-SRC-140-005, Ref. FDC 10371, Rev. 0, October 6, 2016*
- USQ-16608, *FDC 10592, Specify CRR Thermowell Materials, Rev. 0, October 15, 2015*
- USQ-16610, *FDC 10647, Add Belleville Washers to Filter Hold Down System, Rev. 0, October 8, 2015*
- USQ-16611, *FDC 10648: IWTU - Sub Tube Sheet Assembly Plugs, Rev. 0, October 8, 2015*
- USQ-16611, *FDC 10648: IWTU - Sub Tube Sheet Assembly Plugs; WO 656960: Remove PGF Filter Elements from Bundles 14 and 17, Rev. 1, October 19, 2015*

- USQ-16621, *FDC 10650, Material Substitution for Spare PGF Captive Nut Handles*, Rev. 0, October 15, 2015
- USQ-16623, *NCR 108620 Auger-grinder Solids Valve Bellows (manufactured too small to fit)*, Rev. 0, October 19, 2015
- USQ-16628, *FDC 10628, CRR Spectacle Blind Isolation and Fluidizing Rail Nitrogen Blow-Down; FCF 8717, CRR Spectacle Blind Installation & Nitrogen Blowdown Installation for the CRR Fluidizing Nozzles; IDB-DBC-0485-FDC-10628, Fluidizing Rail Blow Down*, Rev. 0, November 30, 2015
- USQ-16639, *TDR 8014-002 PGF Bundles #1, 8, 11, 14, 17*, Rev. 0, October 20, 2015
- USQ-16654, *FDC 10662: IWTU - Add Filter Bundle Spider Gap Dimension*, Rev. 0, October 28, 2015
- USQ-16658, *NCR 108648 Coal Attributes (Minimum & Maximum Size) - Use-As-Is*, Rev. 0, October 29, 2015
- USQ-16668, *PISA - Inadequate Controls Derived for IWTU Deflagration Events*, Rev. 1, November 6, 2015
- USQ-16674, *FDC 10674: IWTU - Reroute of Rm 205 N2 Spool Piece; FCF 8723: IWTU - Reroute of Rm 205 N2 Spool Piece*, Rev. 0, November 11, 2015
- USQ-16686, *FCF-8719, Replace SIF-3 Loop Bypass Switch Contact Blocks & FDC 10670, IWTU - Replace Contacts on SIF-3 Bypass Reset Switches*, Rev. 0, November 4, 2015
- USQ-16686, *FCF-8719, Replace SIF-3 Loop Bypass Switch Contact Blocks & FDC 10670, IWTU - Replace Contacts on SIF-3 Bypass Reset Switches; DRF 347706 to Revision 9 of TPR-7908, "IWTU-SSIS Operation"*, Rev. 1, February 10, 2016
- USQ-16693, *PLN-4190, Rev. 5, Radiological Monitoring and Surveillance Plan for IWTU Startup (DRF 347016)*, Rev. 0, November 5, 2015
- USQ-16710, *FDC 10668, Increase Capacity of Chilled Water Pumps P-SRH-201-A and P-SRH-201-B; FCF 8718, Increase Capacity of Chilled Water Pumps P-SRH-201-A and P-SRH-201-B*, Rev. 0, November 12, 2015
- USQ-16711, *FDC 10639, Install Low Point Drain in PHVF Gas Outlet; FCF 8711, Add Drain to PHVF Process Gas Pipe; CSCF 799, Drain Valves for Vessels; IDB-DBC-0490, Add Drain to PHVF*, Rev. 0, November 12, 2015
- USQ-16711, *FDC 10639, Install Low Point Drain in PHVF Gas Outlet; FCF 8711, Add Drain to PHVF Process Gas Pipe; CSCF 799, Drain Valves for Vessels; IDB-DBC-0490, Add Drain to PHVF*, Rev. 1, November 17, 2015
- USQ-16713, *FDC 10614: Install Low Point Drain in PGF Gas Outlet; FCF 8708: Add Drain to PGF Process Gas Pipe; CSCF 799, Drain Valves for Vessels; IDB-DBC-0487, Add Drain to PGF*, Rev. 0, November 16, 2015
- USQ-16715, *FDC 10638: Install Low Point Drain in PRF Gas Outlet; FCF 8710; CSCF 799, Drain Valves for Vessels; IDB-DBC-0489, Add Drain to PRF*, Rev. 0, November 17, 2015
- USQ-16717, *TM FDC 10672, Specify Alternative Alloy for CRR Thermowell Round Bar*, Rev. 0, November 18, 2015
- USQ-16720, *FDC 10637: Install Low Point Drain in OGF Gas Outlet; FCF 8709: Add Drain to OGF Process Gas Pipe; CSCF 799, Drain Valves for Vessels; IDB-DBC-0488, Add Drain to OGF*, Rev. 0, November 16, 2015
- USQ-16739, *FDC 10676: Increase PRF/PHVF Back Pulse Reservoir Capacities*, Rev. 0, December 7, 2015
- USQ-16742, *FDC 10692: Auger-Grinder: End Plate Option, Nitrogen Assist Cover Plate*, Rev. 0, November 24, 2015
- USQ-16748, *FDC 10689: IWTU - Auger Grinder VFD/Motor - add dV/dT Filter; WO 657365 FDC 10689 Add dV/dT Filter to Auger-Grinder Motor*, Rev. 0, November 25, 2015

- USQ-16750, *EAR-284 Rev. 37 IWTU - Alarm Response (DFC 130620)*, Rev. 0, November 25, 2015
- USQ-16756, *EPF-061 Using a Mixture of N2 and Steam in the DMR Fluidizing Gas*, Rev. 0, December 2, 2015
- USQ-16766, *FDC 10700, IWTU - Add TIT-SRC-160-008 to CRR AVG Bed Temp Calculation; CSCF 809 Modify CRR Average and Temp, Diff, Calculations*, Rev. 0, December 15, 2015
- USQ-16768, *FDC 10709, IWTU Modify DMR Average and Temperature Differential Calculations; CSCF 810, IWTU Modify DMR Average and Temperature Differential Calculations*, Rev. 0, December 7, 2015
- USQ-16776, *FDC 10679, IWTU - Permanent Work Platforms for PRF and PHVF*, Rev. 0, December 16, 2015
- USQ-16778, *FDC 10686, IWTU - Permanent Work Platforms for OGF and PGF*, Rev. 0, December 16, 2015
- USQ-16779, *FDC 10707: IWTU - Replace Fluorescent Stairwell Lighting with Newer Models without Battery Backup*, Rev. 0, December 12, 2015
- USQ-16782, *FC 1 to WO 657033 (M01) Calibration of Hydrogen and CO2 Monitors*, Rev. 0, December 10, 2015
- USQ-16795, *FDC 10720: Add Parallel Backflow Preventer to Demineralization System; FCF 8727: Add Parallel Backflow Preventer to Demineralization System*, Rev. 0, December 18, 2015
- USQ-16804, *FDC 10714, CRR Nozzle N2 Drain Enhancement; FCF 8729, CRR Nozzle N2 Drain Enhancement*, Rev. 0, January 13, 2016
- USQ-16834, *FDC 10697: Install Auxiliary Pumps in Cell Sumps; FCF 8726: Provide Backup Pumps to Sump Jets at IWTU*, Rev. 1, Rev. 0, January 11, 2016
- USQ-16834, *FDC 10697: Install Auxiliary Pumps in Cell Sumps; FCF 8726: Provide Backup Pumps to Sump Jets at IWTU, Rev. 1; CSCF-812: Install Auxiliary Pumps in Cell Sumps per FDC 10697*, Rev. 1, April 13, 2016
- USQ-16840, *FDC 10722, DMR Auger Grinder Nitrogen Purge Heaters; FCF 8728, DMR Auger Grinder Nitrogen Purge Heaters; IDB-DBC-0495, Add Auger Grinder Heaters to Nitrogen Purge; FDC 10751, Replace Check Valve on DMR Auger/Grinder Purge line NR-162516*, Rev. 1, February 1, 2016
- USQ-16840, *FDC 10722, DMR Auger Grinder Nitrogen Purge Heaters; FCF 8728, DMR Auger Grinder Nitrogen Purge Heaters; IDB-DBC-0495, Add Auger Grinder Heaters to Nitrogen Purge; FDC 10751, Replace Check Valve on DMR Auger/Grinder Purge line NR-162516; FCF 8728, Rev. 1, DMR Auger/Grinder Nitrogen Purge Heaters; WO 657976, WOC1, FDC 10722 DMR Auger-Grinder Nitrogen Purge Heaters; IR/CO, IWTU-C061, dated 02/17/16, FDC 10722, DMR Auger Grinder Nitrogen Purge Heaters; IR/CO, IWTU-C063, dated 02/25/16, IWTU Pipe and Tubing Supports; WO 657976, WOC2, FDC 10722 DMR Auger-Grinder Nitrogen Purge Heaters; FDC 10830, Wiring Clarification for Auger Grinder Heaters, Ref. FDC 10722*, Rev. 5, March 22, 2016
- USQ-16851, *FDC 10731, IWTU - Install Hardfacing on ROTO-Flate Valves*, Rev. 1, January 27, 2016
- USQ-16855, *NCR 108733_FDC 10734_wo 657969, FDC 10734 HTR-SRB-365 EX1 & EX2 Gasket Replacement*, Rev. 0, January 11, 2016
- USQ-16855, *NCR 108733_FDC 10734_wo 657969, FDC 10734 HTR-SRB-365 EX1 & EX2 Gasket Replacement; FDC 10879, Update Gasket Material on Superheater*, Rev. 1, April 26, 2016
- USQ-16858, *WO 657841, Clean DMR Interior #2; WOC 1 WO 657841, Clean DMR Interior #2; WOC2 to WO 657841, Clean DMR Interior #2; WOC3 to WO 657841, Clean DMR Interior #2; WOC5 to WO 657841, Clean DMR Interior #2; WOC6 to WO 657841, Clean DMR Interior #2*, Rev. 5, March 7, 2016

- USQ-16883, *FDC 10737, IWTU - Install New Relief Valve - Instrument Air Tank; FCF 8731, IWTU, Add 2nd Relief Valve to Instrument Air Receiver VES-SRB-166, Rev. 0, January 28, 2016*
- USQ-16883, *FDC 10737, IWTU - Install New Relief Valve - Instrument Air Tank; FCF 8731, IWTU, Add 2nd Relief Valve to Instrument Air Receiver VES-SRB-166; FDC 10808, IWTU- Instrument Air Tank Relief Line Change; IR/CO-IWTU-C-065, dated 02/29/16, IWTU Relief Valve Outlet Piping, Rev. 1, March 3, 2016*
- USQ-16896, *FDC 10745, IWTU - Process Cell 2 Door Modification, Rev. 0, February 25, 2016*
- USQ-16919, *FDC 10738, IWTU - Install Mass Flow Controllers to DMR Nitrogen Purges for Existing Pressure Instruments; FCF-8733, Replace Existing Rotameters on DMR Nitrogen Purge Lines with Locally-Controlled Flow Controllers, Rev. 1, February 3, 2016*
- USQ-16932, *FDC 10757, IWTU - Replace Dilution Probe Sample Isolation Valve, Rev. 0, January 28, 2016*
- USQ-16957, *FDC 10755, Add Strainer to Sample Line; FCF 8734, Add Strainer to Sample Line; NCR 108757, IWTU Sample Valve Purges, Rev. 0, February 4, 2016*
- USQ-16959, *FDC 10766, IWTU - Clarification of Grounding for FDC 10638 and 10639; FCF-8710r1, Add Drain to PRF Process Gas Pipe; FCF-8711r1, Add Drain to PHVF Process Gas Pipe, Rev. 0, February 9, 2016*
- USQ-16960, *FDC 10767, IWTU - Change Tag Number on FDC 10637 from HV-SRC-160-016 to HV-SRC-160-019; FCF-8708r1, Add Drain to PGF Process Gas Pipe; FCF-8709r1, Add Drain to OGF Process Gas Pipe, Rev. 0, February 9, 2016*
- USQ-16962, *TM FDC 10761, IWTU - DMR Ring Header Erosion Plates, Rev. 1, February 18, 2016*
- USQ-16963, *FDC 10681, Modify Pipe Supports to Decrease Pipe Stress Loading, Rev. 0, February 8, 2016*
- USQ-16967, *FDC 10762, IWTU - Valve NRV-SRC-533-141 Replacement, Rev. 0, February 9, 2016*
- USQ-16979, *FDC 10770, Nitrogen Purge Correction; FC (FDC 10770) to WO 657361, FDC 10628 CRR Spectacle Blind Isolation and FG Rail BD, Rev. 0, February 17, 2016*
- USQ-17017, *FDC 10774, IWTU - Change FIT-SRC-160-015 to New Style Flowmeter, OGC Cooling Water Flowrate; FCF-8737, Change FIT-SRC-160-015 to New Style Flowmeter; CSCF-819, IWTU - FIT-SRC-160-015 to New Style Flowmeter, OGC Cooling Water Flowrate; IDB-DBC-0499 Change FE/FIT-SRC-160-015, OGC Flow Meter, Rev. 0, February 18, 2016*
- USQ-17028, *FDC 10790 Modify Ladder Logic for DDS-1485, HS-H-200-3B Damper Logic; CSCF-826, CSCF-0799 Modify Ladder Logic for DDS-1485, HS-H-200-3B Damper Logic; DDS - 1485, IWTU DCS Controller 1603 Ladder Logic, Rev. 0, March 2, 2016*
- USQ-17029, *FDC 10787, IWTU Set Position of FV-SRC-153-001 on DCS; CSCF-819 IWTU Set Position of FV-SRC-153-001 on DCS, Rev. 0, February 25, 2106*
- USQ-17030, *FDC 10789, Modify Actuator Coupling for Valve HV-SRV-140-032, Rev. 0, March 3, 2016*
- USQ-17041, *PISA No TSR level Controls to Prevent Process Off Gas Component Overpressurization/Breach from Nitrogen Purges while Isolated, Rev. 0, February 25, 2016*
- USQ-17046, *FDC 10786, Add Tie Rods and Spacers to Superheater Element Bundle Baffles, Rev. 0, February 23, 2016*
- USQ-17052, *FDC 10788, IWTU - Add (6) Thermocouples to Super Heater, HTR-SRB-366; FCF-8739, Add (6) Thermocouples to Super Heater, HTR-SRB-366; IDB-DBC-0500, Add Thermocouples to Super Heater; CSCF-822, Add Thermocouples to Superheater per FDC 10788, Rev. 0, February 25, 2016*
- USQ-17061, *FDC 10797, Change Trouble on TSH-B-364-6, Gas Cannon Logic to Start when Valve Opens, Decon System Feedback Speed and Add Nitric Acid Flow in Molarity; CSCF-821*

Change Trouble on TSH-B-364-6, Gas Cannon Logic to Start when Valve Opens, Decon System Feedback Speed and Add Nitric Acid Flow in Molarity; IDB-DBC-0501 Change Trouble on TSH-B-364-6, DCS Change, Rev. 0, March 2, 2016

- USQ-17069, *IDB-DBE-0486 & 0493 Instrument Range Changes in the Database, Rev. 0, February 27, 2016*
- USQ-17072, *FDC 10801: Optional Modification for BLO-SRH-200-A/B/C Motor Base Filler Pads, Rev. 0, March 7, 2016*
- USQ-17077, *FDC 10804, IWTU - Label Correction for Drawing 634109, Ref. FDC 10770; IDB-DBC-0502, Label Correction for Drawing 634109, Ref. FDC 10770; CSCF-827, Label Correction for Drawing 634109 per FDC 10804; FCF 8717, CRR Spectacle Blind Installation & Nitrogen Blowdown Installation for the CRR Fluidizing Nozzles Revision 1, Rev. 1, March 15, 2016*
- USQ-17092, *FDC 10802: ITWU - Lighting for CANISTER FILL/DECON #2 Cell - Rm 114, Rev. 0, March 3, 2016*
- USQ-17092, *FDC 10802: ITWU - Lighting for CANISTER FILL/DECON #2 Cell - Rm 114; FCF-8742, Rev 0: IWTU - Lighting for CANISTER FILL/DECON #2 Cell - Rm 114, Rev. 1, March 10, 2016*
- USQ-17097, *FDC 10793, Modify Superheater Sub-Vessel Supports, Rev. 0, March 7, 2016*
- USQ-17097, *FDC 10793, Modify Superheater Sub-Vessel Supports; FDC 10842, Modify Superheater Sub-Vessel Support Surface Finish, Rev. 1, March 28, 2016*
- USQ-17097, *FDC 10793, Modify Superheater Sub-Vessel Supports; FCF-8739, Add (6) Thermocouples to Super Heater, HTR-SRB-365; FDC 10842, Modify Superheater Sub-Vessel Support Surface Finish; FDC 10759, IWTU Superheater EX3 Shell Repair, Rev. 3, April 15, 2016*
- USQ-17139, *TM FDC 10806, IWTU - Add C02 Gas Piping to DMR Atomizer Nozzles and AG Purges; IDB-DBC-0506, C02 Trailer Addition; CSCF- 832, Add switch to DMR N2 Atomizing gas flow indicators to allow for measuring C02; PSV Evaluation Attachment to TM FDC 10806, Rev. 0, March 23, 2016*
- USQ-17139, *TM FDC 10806, IWTU - Add C02 Gas Piping to DMR Atomizer Nozzles and AG Purges; IDB-DBC-0506, C02 Trailer Addition; CSCF- 832, Add switch to DMR N2 Atomizing gas flow indicators to allow for measuring C02; PSV Evaluation Attachment to TM FDC 10806; TM FDC 10845: Add PI and Reconcile Labels on IWTU C02 System; TM FDC 10871: IWTU - Grounding Clarification and Tag Numbers Assigned for C02 Trailer, Rev. 1, April 13, 2016*
- USQ-17139, *TM FDC 10806, IWTU - Add C02 Gas Piping to DMR Atomizer Nozzles and AG Purges; IDB-DBC-0506, C02 Trailer Addition; CSCF- 832, Add switch to DMR N2 Atomizing gas flow indicators to allow for measuring C02; PSV Evaluation Attachment to TM FDC 10806; TM FDC 10845: Add PI and Reconcile Labels on IWTU C02 System; TM FDC 10871: IWTU - Grounding Clarification and Tag Numbers Assigned for C02 Trailer; FDC 10863, Correct Drawing 570620-12F1 in TM-FDC 10806, Rev. 3, April 19, 2016*
- USQ-17143, *TPR-7900 Rev. 20 IWTU-Preparation For Startup, Rev. 0, March 16, 2016*
- USQ-17153, *TM-FDC 10810, IWTU-Temporary NOx Monitor Installation on H2 House; IDB-DBC-0504, TM-FDC 10810, Add NOx Monitor to H2 House; TM-FDC 10839, IWTU - DMR NOx Monitor System Upgrades; WOC2 to WO 658719, TM FDC 10810, Install NOx Monitor on H2 House; IRCO IWTU-C069, Rev. 2, April 8, 2016*
- USQ-17153, *TM-FDC 10810, IWTU-Temporary NOx Monitor Installation on H2 House; IDB-DBC-0504, TM-FDC 10810, Add NOx Monitor to H2 House; TM-FDC 10839, IWTU - DMR NOx Monitor System Upgrades; WOC2 to WO 658719, TM FDC 10810, Install NOx Monitor on H2 House; IRCO IWTU-C069; TM FDC 10887, IWTU - Label NOx Monitoring System Root Isolation Valve, Rev. 3, May 6, 2016*

- USQ-17154, *TM FDC 10811: IWTU - Temporary DMR Thermocouple Installation*, Rev. 0, March 18, 2016
- USQ-17169, *FDC 10836, Modify Actuator Base for Valve HV-SRC-140-032*, Rev. 0, March 23, 2016
- USQ-17174, *FDC 10823: Add Multiplier FCM to FC-H-144-1; CSCF-820: Add multiplier to FC-H-144-1 Calculation; IDB-DBC-0505: Change Range of FIT-SRH-144-001*, Rev. 0, March 23, 2016
- USQ-17181, *FDC 10812, Replace DMR Sparge Ring; FCF 8740 Redesigned Ring Header for the DMR Vessel*, Rev. 0, March 30, 2016
- USQ-17182, *FDC 10827: Change R5 RSS Logic; CSCF-815: Change R5 RSS Logic*, Rev. 0, March 28, 2016
- USQ-17187, *FDC 10833 Improve Material Flow through Auger Grinder; FCF 8730 Modification to Auger Grinder Screen and Shaft*, Rev. 0, March 28, 2016
- USQ-17193, *FDC 10844 Process Steam Filters F-SRB-164A, -164B Head O-rings*, Rev. 0, April 4, 2016
- USQ-17209, *FDC 10730, Apply Hardfacing Weld Overlay on DMR Fluidizing Gas Rails*, Rev. 0, April 4, 2016
- USQ-17211, *FDC 10831, Repair Existing EX2 Heater Element Bundle for HTR-SRB-365*, Rev. 0, April 6, 2016
- USQ-17211, *FDC 10831, Repair Existing EX2 Heater Element Bundle for HTR-SRB-365; FDC 10888 Isolate Individual Elements in EX1, EX2 on HTR-SRB-365*, Rev.1, May 5, 2016
- USQ-17221, *FDC 10835, IWTU - Add Steam Traps to HVAC Preheat Coil Piping; FCF 8744, Add Steam Traps to HVAC Preheat Coil Piping*, Rev. 1, April 20, 2016
- USQ-17231, *DRF-348315 TPR-7903 IWTU Startup Revision 24*, Rev. 0, April 13, 2016
- USQ-17239, *FDC 10859: Add Access Panel in Wall for Superheater*, Rev. 0, April 12, 2016
- USQ-17240, *FDC 10870, IWTU - Clarification of Heat Trace Detail, Ref. FDC 10591 and FDC 10595*, Rev. 0, April 13, 2016
- USQ-17242, *TPR-7905, Revision 17, IWTU Normal Operations, DRF-348338*, Rev. 0, April 13, 2016
- USQ-17244, *FDC 10862: Relocate Treated Water Flowmeter*, Rev. 0, April 13, 2016
- USQ-17248, *TM FDC 10872 IWTU Replace Swagelock Flex Hose with Global Flex Hose*, Rev. 0, April 15, 2016
- USQ-17277, *FDC 10885, IWTU - Clarification of RTD Wiring for TC-SRC-942-003 (H2 House Heat Trace)*, Rev. 0, May 2, 2016
- USQ-17287, *FDC 10886, IWTU - Change Heat Trace Setpoints and RTD Placement on H2 Stand Heat Trace, Ref. FDC 10595*, Rev. 0, May 3, 2016
- USQ-17290, *FDC 10890 - Bolting Options for Piping Connections Around the Inlet to Superheater*, Rev. 0, May 5, 2016
- USQ Applicability, *FDC 10892 - Clarification of Flow Meter Wiring on H2 Stand (STND-SRC-607E) (ref. FDC 10595)*, Rev. 0, May 16, 2016

Interviews

- CWI IWTU Nuclear Facility Manager
- CWI IWTU Chief Engineer
- CWI IWTU Safety Analysis Manager
- ID Deputy Manager for ICP Core
- ID Nuclear and Safety Performance Assistant Manager
- ID Nuclear Safety Supervisor

- ID Nuclear Safety Specialist
- ID IWTU Facility Representative
- Fluor Idaho Chief Engineer
- Fluor Idaho Independent Safety Review Committee (ISRC) Chairman
- Fluor Idaho Project Evaluation Board (PEB) Manager
- Fluor Idaho Director of Idaho Nuclear Technology and Engineering Center (INTEC)
- Fluor Idaho Nuclear Criticality Safety Manager
- Fluor Idaho IWTU Engineering Manager
- Fluor Idaho IWTU Nuclear Facility Manager
- Fluor Idaho IWTU Safety Analysis Lead
- Fluor Idaho IWTU Senior Process Engineer
- Fluor Idaho IWTU Nuclear Safety Analyst (2)
- Fluor Idaho IWTU System Engineer (2)

Observations

- Walk-through of IWTU facility
- Plan-of-the-day meeting