ENTERED

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

MAR 10 2016

MAR 10 2016

Mr. Jonathan D. Edwards, Director
Radiation Protection Division
U.S. Environmental Protection Agency
1200 Pennsylvania Ave, NW- MC 6608T
Washington, D.C. 20460

Subject: Supplemental Information to the January 28, 2015 Letter from Jose R. Franco,Manager, U.S. Department of Energy - Carlsbad Field Office to Jonathan D. Edwards, Director, U.S. Environmental Protection Agency Regarding the 2014 Biennial Environmental Compliance Report

Dear Mr. Edwards:

On December 17, 2014, the U.S. Environmental Protection Agency (EPA) requested that the U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) provide supplemental information on the 2014 Biennial Environmental Compliance Report (BECR) that addresses the February 5, 2014 underground salt haul truck fire and the February 14, 2014 radiological release at the Waste Isolation Pilot Plant (WIPP) facility. The DOE responded to the EPA's request on January 28, 2015. In that letter, the DOE provided a supplement to the 2014 BECR that included additional information pertinent to the events for the time period of April 1, 2014 to January 30, 2015. The DOE also committed in the January 28, 2015 letter to provide the EPA, at a future date, the approved DOE and the Nuclear Waste Partnership LLC (NWP) Corrective Action Plans (CAPs) that responded to the Accident Investigation Board (AIB) reports on the events.

On February 25, 2015, the DOE provided to the EPA three approved CAPs prepared in response to the March 2014 and April 2014 Waste Isolation Pilot Plant (WIPP) Accident Investigation Reports as listed in the bullets below:

- *US. Department of Energy, Carlsbad Field Office, Corrective Action Plan Addressing the Accident Investigation Report of: the Underground Salt haul Truck Fire at the Waste Isolation Pilot Plant, February 5, 2014, and the Radiological Release Event at the Waste Isolation Pilot Plant, on February 14, 2014, Revision 0*

- *Nuclear Waste Partnership LLC, Corrective Action Plan, Underground Salt Haul Truck Fire Event*

- *Nuclear Waste Partnership LLC, Corrective Action Plan, Phase 1 Radiological Release Event*

160313

CBFO:EPD:GTB:ELN:16-0514:UFC 5486.00

As an enclosure to this letter, the DOE is providing the EPA one revised and one new CAP as listed in the bullets below:

- *US. Department of Energy, Carlsbad Field Office, Corrective Action Plan Addressing the Accident Investigation Report of: the Underground Salt haul Truck Fire at the Waste Isolation Pilot Plant, February 5, 2014, the Radiological Release Event at the Waste Isolation Pilot Plant, on February 14, 2014, Revision 1*

- *Nuclear Waste Partnership LLC, CAP Addendum, Radiological Release Event (Phase II).*

The DOE is providing this supplemental information to assist the EPA in a compliance determination for the 2014 BECR for the WIPP Project.

If you have any questions, please contact Mr. George T. Basabilvazo at (575) 234-7488.

Sincerely,

Todd Shrader, Manager
Carlsbad Field Office

cc: (w/enclosure)

J. Walsh, EPA	*ED
T. Peake, EPA	ED

cc: (w/enclosure)

G. Basabilvazo, CBFO	ED
R. Patterson, CBFO	ED
A. Stone, CBFO	ED
A. Ward, CBFO	ED
A. Harris, HQ	ED
F. Marcinowski, HQ	ED
J. Roberson, DNFSB	ED
S. Lucas-Kamat, NMED	ED
R. Maestas, NMED	ED
S. Spalding, R6	ED
N. Stone, R6	ED

Nuclear Waste Partnership LLC

An AECOM-led partnership with B&W and AREVA

AA:16:01020
UFC:5486.00

February 10, 2016

Mr. Todd Shrader, Manager
Carlsbad Field Office
U.S. Department of Energy
P.O. Box 3090
Carlsbad, NM 88221-3090

Subject: SUPPLEMENTAL INFORMATION TO THE JANUARY 28, 2015 LETTER FROM JOSE R. FRANCO, MANAGER, U.S. DEPARTMENT OF ENERGY - CARLSBAD FIELD OFFICE TO JONATHAN D. EDWARDS, DIRECTOR, U.S. ENVIRONMENTAL PROTECTION AGENCY REGARDING THE 2014 BIENNIAL ENVIRONMENTAL COMPLIANCE REPORT

Dear Mr. Shrader:

Nuclear Waste Partnership LLC is providing you with the subject supplement to be submitted to the U.S. Environmental Protection Agency (EPA). For your convenience, a draft transmittal letter to the EPA is enclosed.

If you have any questions, please contact me at Extension 7400 or Mr. R. R. Chavez at Extension 3225.

Sincerely,

Philip J. Breidenbach
Project Manager

mv

Enclosures (2)

cc: (with enclosures)
G. T. Basabilvazo, CBFO
A. Ward, CBFO
A. Stone, CBFO
R. Patterson, CBFO

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (575) 234-7200 • Fax: (575) 234-7083

bcc: NWP Distribution
(without enclosures)

D. N. Cook	ED
Z. M. Cabrera	ED
C. Navarrette	ED
B. P. Shagula	ED

RES Distribution
(without enclosures)

J. C. Haschets	ED
S. B. Jones	ED
S. C. Kouba	ED
L. J. Madl	ED
H. Moore	ED
J. McLemore	ED
W. A. Most	ED
L. L. Pastorello	ED
R. A. Salness	ED

Department of Energy
Washington, DC 20585

AUG 05 2015

MEMORANDUM FOR DANA BRYSON
ACTING MANAGER
CARLSBAD FIELD OFFICE

FROM: JAMES HUTTON [redacted]
DEPUTY ASSISTANT SECRETARY FOR
SAFETY, SECURITY, AND QUALITY PROGRAMS

SUBJECT: Concurrence of Approval for Nuclear Waste Partnership LLC Corrective Action Plan

The Carlsbad Field Office submitted the Nuclear Waste Partnership LLC Corrective Action Plan (CAP) in response to the Phase II Radiological Release Event at the Waste Isolation Pilot Plant Accident Investigation Report, requesting my approval. My staff and I have reviewed the CAP dated July 16, 2015, and concluded that the actions specified in this CAP address the Judgments of Need identified in the report. I concur in the approval of this CAP.

Please provide my office with a monthly status update on this CAP, as well as the previously approved CAPs.

If you have any further questions, please contact me or have your staff contact Mr. Robert Murray, Director, Office of Standards and Quality Assurance, at (202) 586-7267.

cc: Wes Mouser, CBFO
Sean Dunagan, CBFO
Mark Whitney, EM-1 (Acting)
Monica Regalbuto, EM-2.1
Frank Marcinowski, EM-30
Doug Tonkay, EM-31
Mark Senderling, EM-32
Todd Lapointe, EM-41
Terrance Tracy, EM-42
Robert Murray, EM-43
Jimmy McMillian, EM-44

UNIQUE #	DOE DFO	DATE REC'VD	
1501837	230000	AUG 06 2015	DBryson WMouser SDunagan GHelkston

Printed with soy ink on recycled paper

DOE F 1325.8

United States Government

Department of Energy

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: JUL 30 2015

REPLY TO ATTN OF: CBFO:RMO:SCD:MAG:15-2403:UFC 2300.00

SUBJECT: Request for Concurrence of the NWP Addendum to the Radiological Release Event CAP

REFERENCE 1: NWP Letter CO:15:02971 UFC:4250.00 from M.P. Gonzales (NWP) to Vicki Diane Snow (CBFO), dated July 17, 2015, Subject: Resubmittal of the Addendum to the Radiological Release Event Corrective Action Plan Under Nuclear Waste Partnership LLC Contract DE-EM0001971

TO: James A. Hutton, Deputy Assistant Secretary for Safety, Security, and Quality Programs, EM-40

This memorandum requests your concurrence on the Nuclear Waste Partnership LLC (NWP) Corrective Action Plan (CAP) submitted to the Carlsbad Field Office (CBFO) in Reference 1. This CAP is responsive to the Conclusions and Judgments of Need, NWP is responsible for in the Accident Investigation Report, Phase 2, Radiological Release Event at the Waste Isolation Pilot Plant, February 14, 2014. Members of your staff and the CBFO have been involved with NWP in the review of these corrective actions. The CBFO is in agreement with this CAP and plans to approve it, upon receipt of your concurrence.

If you have any questions, please contact Mr. Sean C. Dunagan, CBFO Senior Recovery Manager, at (575) 234-7032.

[redacted]

Dana C. Bryson, Acting Manager
Carlsbad Field Office

Attachment: (Reference 1)

cc: w/attachment

G. Hellstrom, CBFO	*ED
S. Dunagan, CBFO	ED
R. Dodd, CTAC	ED
CBFO M&RC	

*ED denotes electronic distribution

CBFO:RMO:SCD:MAG:15-2403:UFC 2300.00

REFERENCE 1

NWP Letter CO:15:02971 UFC:4250.00 from M.P. Gonzales (NWP) to Vicki Diane Snow (CBFO), dated July 17, 2015, Subject: Resubmittal of the Addendum to the Radiological Release Event Corrective Action Plan Under Nuclear Waste Partnership LLC Contract DE-EM0001971

NWP
Nuclear Waste Partnership LLC
An AECOM-led partnership with B&W and AREVA

CO:15:02971
UFC:4250.00

July 17, 2015

Ms. Vicki Diane Snow, Contracting Officer
Business Operations Division
Carlsbad Field Office
U.S. Department of Energy
P.O. Box 3090
Carlsbad, NM 88221-3090

Subject: RESUBMITTAL OF THE ADDENDUM TO THE RADIOLOGICAL RELEASE EVENT CORRECTIVE ACTION PLAN UNDER NUCLEAR WASTE PARTNERSHIP LLC PRIME CONTRACT DE-EM0001971

Reference: NWP Memorandum CO:15:02964: UFC:4250.00 from M. P. Gonzales to Vicki Diane Snow DOE dated June 26, 2015, subject: Submittal of Addendum to the Radiological Release Event Corrective Action Plan, under Nuclear Waste Partnership LLC Contract DE-EM0001971

Dear Ms. Snow:

NWP hereby resubmits the Corrective Action Addendum for Radiological Release Event (Phase II). This resubmission reflects changes based on integrated review sessions between NWP, CBFO, and DOE Environmental Management and supersedes the June 26 submittal referenced above.

If you have any questions regarding this submittal, please contact Mr. M. S. Hendrickson at Extension 8341.

Sincerely,

[redacted]

M. P. Gonzales, Manager
Contracts

MPG:afh

Attachment

cc: D. Bryson, CBFO
M. Brown, CBFO
G. Basabilvazo, CBFO
S. Dunagan, CBFO
C. Gadbury, CBFO
G. Hellstrom, CBFO
S. Hunt, CBFO
W. Mackie, CBFO
W. Mouser, CBFO

UNIQUE #	DOE UFC	DATE REC'VD	ADDRESSEES
1501686	4250.00	JUL 17 2015	D. Snow D. Bryson M. Brown G. Basabilvazo S. Dunagan C. Gadbury G. Hellstrom S. Hunt B. Mackie W. Mouser

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (575) 234-7200 • Fax: (575) 234-7083

Nuclear Waste Partnership LLC

Corrective Action Plan Addendum

Radiological Release Event (Phase II)

[redacted]

NWP President & Project Manager Date

NWP

Nuclear Waste Partnership LLC

An AECOM-led partnership with B&W and AREVA

This page intentionally left blank.

Table of Contents

Acronyms 4

1.0 Introduction 5

2.0 Accident Investigation 5

3.0 JON Action Plans 6

Judgment of Need (JON 2) 7

Judgment of Need (JON 7) 8

Judgment of Need (JON 8) 10

Judgment of Need (JON 12) 13

Judgment of Need (JON 33) 15

Judgment of Need (JON 34) 16

Judgment of Need (JON 35) 17

Judgment of Need (JON 36) 18

ACRONYMS

AIB	Accident Investigation Board
AK	Acceptable Knowledge
ANL	Argon National Laboratory
CBFO	U.S. Department of Energy Carlsbad Field Office
CCP	Central Characterization Program
CH	Contact Handled
DSA	Documented Safety Analysis
DOE	U.S. Department of Energy
FHA	Fire Hazard Analysis
INL	Idaho National Laboratory
JON	Judgment of Need
LANL	Los Alamos National Laboratory
ORNL	Oak Ridge National Laboratory
NTP	National TRU Program
NWP	Nuclear Waste Partnership LLC
PA	Performance Assessment
RCRA	Resource Conservation and Recovery Act
RH	Remote Handled
RTR	Real Time Radiography
SNL	Sandia National Laboratory
SRS	Savannah River Site
TRU	Transuranic
TWPC	Transuranic Waste Processing Center
U/G	Underground
VE	Visual Examination
WAC	Waste Acceptance Criteria
WCRRF	Waste Characterization, Reduction, and Repackaging Facility
WIPP	Waste Isolation Pilot Plant

1.0 INTRODUCTION

On Friday, February 14, 2014 there was an incident in the underground (U/G) repository at the Waste Isolation Pilot Plant (WIPP), which resulted in the release of americium and plutonium from one or more transuranic (TRU) waste containers into the U/G mine and the environment. The accident investigation was performed in two phases. This addendum is intended to address the Judgments of Need identified in the Accident Investigation Board's Phase II report.

2.0 ACCIDENT INVESTIGATION

On February 27, 2014, the Deputy Assistant Secretary for Safety, Security, and Quality Programs, U.S. Department of Energy, Office of Environmental Management, formally appointed a second Accident Investigation Board (the Board) to investigate the radiological release in accordance with DOE O 225.1B, *Accident Investigations*.

The Board began the investigation on March 3, 2014, completed Phase 1 of the investigation on March 28, 2014, and submitted the report to the Acting Deputy Assistant Secretary for Safety, Security, and Quality Programs, U.S. Department of Energy, Office of Environmental Management on April 1, 2014. The Phase 1 report covers the Board's conclusions for the release of TRU from the U/G to the environment. Based upon the conclusions of this accident investigation, the Board concluded that the above ground release identified in Phase 1 of the investigation was preventable. On April 24, 2014 the Board's Accident Investigation Report (Report) was published and made available to Nuclear Waste Partnership LLC (NWP).

On May 19, 2014, the Deputy Assistant Secretary, Safety, Security, and Quality Programs, U.S. Department of Energy, Office of Environmental Management, appointed an Accident Investigation Board to complete the investigation (Phase 2). Phase 2 was performed once limited access to the underground was re-established and focused on how the radiological material was released. The Board was appointed to perform an accident investigation and to prepare an investigation report in accordance with Department of Energy Order 225.1B, *Accident Investigations*.

The Board concluded that the following causes, related to NWP, contributed to the accident.

1. Failure of the Central Characterization Program (CCP) to develop an Acceptable Knowledge (AK) for the mixed inorganic nitrate waste stream (LA-MIN02-V.001) that adequately captured all available information regarding waste generation and subsequent repackaging activities in order to prevent the generation, shipment, and emplacement of corrosive, ignitable, or reactive waste. Specifically, the AK Summary Report did not capture changes made to the Waste Characterization, Reduction, and Repackaging Facility (WCRRF) glove-box procedure. The addition of a secondary waste material was not adequately considered.
2. Failure of Nuclear Waste Partnership LLC (NWP) to ensure that the WIPP Fire Hazard Analysis (FHA) recognized the potential for a fire starting within the waste array as well as the potential for propagation within the array. As a result, fire protection controls focused on prevention of propagation to the array from external sources (e.g., vehicles) and did not consider the magnitude of the combustible material hazard.

3.0 JON Action Plans

The following subsections include the 8 JONs pertaining to NWP. Each subsection includes the AIB Report Judgments of Need (JON) description and NWP's approach for addressing the JON. Actions, deliverables, action owners, and planned due dates are listed in table format.

Judgment of Need (JON 2)

JON 2: The National TRU Program (NTP) needs to reevaluate and strengthen the certification audit process across the DOE complex at all generator sites to include:

- **Evaluation of waste generator repackaging operations that prepare TRU waste for characterization;**
- **Implementation of waste generator site processes as they relate to TRU waste management;**
- **Verification that changes to processes are correctly incorporated into acceptable knowledge summary reports;**
- **Verification of effective implementation documentation and programs to ensure that waste generator activities comply with the generator site Resource Conservation and Recovery Act (RCRA) permit; and**
- **Evaluation of local site office oversight of TRU waste operations.**

Approach

As co-permittee, NWP will participate in benchmarking the National Nuclear Safety Site Low-Level Waste generator site certification and oversight program, and assist in evaluating the portions of the program that should be adopted as a TRU waste certification and oversight program. A comprehensive TRU waste certification and oversight program will then be revised or developed and implemented by the co-permittees, which verifies process changes are incorporated, are in compliance with local RCRA requirements, and that evaluate local oversight of TRU waste operations.

Number	Action	Deliverable	Action Owner	Due Date
1	Benchmark the National Nuclear Safety Site Low-Level Waste generator site certification and oversight program.	Evaluation report and recommendations.	NWP Deputy Manager	9/30/2015
2	On behalf of NTP, co-permittees develop a comprehensive review process based on the benchmark evaluation report, with participation from the generator sites that includes the following elements: • Evaluation of waste generator repackaging operations that prepare TRU waste for characterization;	An approved and issued review process.	NWP Deputy Manager	11/30/2015

	• Implementation of waste generator site processes as they relate to TRU waste management; • Verification that changes to processes are correctly incorporated into AK Summary Reports; • Verification of effective implementation documentation and programs to ensure that waste generator activities comply with the generator site Resource Conservation and Recovery Act (RCRA) permit; and • Evaluation of local site office oversight of TRU waste operations. • Evaluation of waste generator site deferred maintenance in TRU waste program operations			
3	Evaluate and identify organization and personnel requirements to support implementation of a TRU waste certification program.	Evaluation Report	NWP Deputy Manager	11/30/2015
4	Train designated personnel to revised process.	Training determination, training material and documentation of completion (e.g., rosters, required reading etc.). Training records providing objective evidence that at least 80% of the designated staff have successfully completed training to the revised process. Untrained personnel will not be authorized to perform the associated functions.	NWP Deputy Manager	12/31/2015

Judgment of Need (JON 7)

The Central Characterization Program (CCP) needs to improve implementation of requirements in CCP-PO-001 such that characterization methods are able to ensure that all Waste Isolation Pilot Plant (WIPP) Waste Acceptance Criteria (WAC) requirements are met.

Approach

CCP will revise CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan* to strengthen and clarify the requirements for implementation of characterization methods Acceptable Knowledge (AK), Real Time Radiography (RTR), and Visual Exam (VE)) to ensure compliance with the WAC. The requirements of CCP-PO-001 allow characterization methods to ensure compliance with the WAC by VE, RTR and review of the AK documentation. Implementation of action plans in JONs 8 and 12 will strengthen the CCP and lead to identification of wastes that would require the D001, D002 or D003 codes that could not otherwise be identified by VE or RTR. To ensure WAC requirements are met, CCP will strengthen the requirements relating to AK in CCP-TP-005 to include preparation of a chemical compatibility memorandum, formalization of AK briefings, and performance of an AK assessment. This assessment will ensure an integrated verification of the effectiveness of AK documentation relating to the management of potentially energetic TRU waste forms (reactive, ignitable and incompatible materials) is adequate, current, and accurately described in the AK Summary Reports. Interface Documents will be revised to include the roles and responsibilities to ensure the integrated verification of AK documentation. Waste certified prior to approval of the revised host site Interface Document will be subject to screening process per CBFO CAP JON 11.9.

Number	Action	Deliverable	Owner	Due Date
1	Revise CCP-TP-005, *Acceptable Knowledge Documentation.*	Submit to Carlsbad Field Office (CBFO) for review and approval.	CCP Certification Manager	7/15/2015
2	Develop a programmatic procedure for development of CCP/ host site Interface Documents.	Submit to Carlsbad Field Office (CBFO) for review.	CCP Operations Manager	8/31/2015
3	Revise Interface Documents for all host sites with active characterization activities.	Approved host site Interface Documents.	CCP Operations Manager	2/29/2016
4	Revise CCP-PO-001 AK requirements.	Submit Revised CCP-PO-001 to CBFO for review and approval.	CCP Certification	9/30/2015

			Manager	
5	Train to Procedures: CCP-TP-005, *Acceptable Knowledge Documentation* CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan* CCP-PO-043, *CCP Interface Document Preparation* CCP-PO-004, *CCP/SRS Interface Document* CCP-PO-012, *CCP/LANL Interface Document* CCP-PO-024, *CCP/INL Interface Document* CCP-PO-027, *CCP/TWPC/ORNL Interface Document* CCP-PO-500, *CCP/ANL RH-TRU Waste Interface Document* CCP-PO-501, *CCP/INL RH-TRU Waste Interface Document* CCP-PO-510, *CCP/SNL Interface Document*	Training determination, training material and documentation of completion (e.g., rosters, required reading etc.). Training records providing objective evidence that at least 80% of the designated staff have successfully completed training to the revised process. Untrained personnel will not be authorized to perform the associated functions.	CCP Support Services Manager	3/29/2016

Judgment of Need (JON 8)

The CCP needs to improve the level of rigor in reviewing and approving AK Summary Reports for compliance with requirements.

Approach

CCP will revise and strengthen the requirements of CCP-TP-005, Acceptable Knowledge Documentation and the host site Interface Documents to include more stringent controls on the preparation, review and approval of AK Summary Reports. Host site Interface Documents will require a more comprehensive list of documents to be developed and maintained by CCP's System of Controls. This will include a more formalized approach to coordination and independent review of documents and operations procedures to include strengthening the control of secondary waste generation. The AK Summary Reports will be reviewed and approved by a broader cross section of disciplines in addition to the current required reviewers. This complement of more detailed requirements will serve to improve communications between the host site and CCP. The revision of CCP-TP-005 and the host site Interface Documents will require implementation of an integrated verification of the effectiveness of AK documentation and management assessments for verification of AK inputs by CCP. Waste certified prior to approval of the revised host site Interface Document will be subject to screening process per CBFO CAP JON 11.9.

Number	Action	Deliverable	Owner	Due Date
1	Revise CCP-TP-005, *Acceptable Knowledge Documentation.*	Submit to CBFO for review and approval.	CCP Certification Manager	7/15/2015
2	Revise Interface Documents for all host sites with active characterization activities.	Approved host site Interface Documents.	CCP Operations Manager	02/29/2016
3	Train to Procedures: CCP-TP-005, *Acceptable Knowledge Documentation* CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan* CCP-PO-043, *CCP Interface Document Preparation* CCP-PO-004, *CCP/SRS Interface Document* CCP-PO-012, *CCP/LANL Interface Document* CCP-PO-024, *CCP/INL Interface Document* CCP-PO-027, *CCP/TWPC/ORNL Interface Document* CCP-PO-500, *CCP/ANL RH-TRU Waste*	Training determination, training material and documentation of completion (e.g., rosters, required reading etc.). Training records providing objective evidence that at least 80% of the designated staff have successfully completed training to the revised process. Untrained personnel will not be authorized to perform the associated functions.	CCP Support Services Manager	3/29/2016

	Interface Document **CCP-PO-501, *CCP/INL RH-TRU Waste Interface Document*** **CCP-PO-510, *CCP/SNL Interface Document***			

Judgment of Need (JON 12)

The CCP needs to reevaluate and strengthen the process used to conduct review and approval of source documents that have an impact on Acceptable Knowledge.

Approach

CCP will revise and strengthen the requirements of CCP-TP-005, Acceptable Knowledge Documentation and the host site Interface Documents to more clearly delineate the roles and responsibilities of the host site and CCP. This will place more stringent controls on the review of AK source documents (e.g., new or revised procedures and processes, work control documentation, Material Safety Data Sheets (MSDS), and technical basis documentation) that could impact the characterization of waste. Site Interface Documents will require a more comprehensive list of documents to be developed and maintained by CCP's System of Controls. This will include a more formalized approach to coordination and independent review of documents and operations procedures to include strengthening the control of secondary waste generation. The AK Summary Reports will be reviewed and approved by a broader cross section of disciplines in addition to the current required reviewers. The revision of CCP-TP-005 and the host site Interface Documents will require implementation of management assessments for verification of AK inputs by CCP. Waste certified prior to approval of the revised host site Interface Document will be subject to screening process per CBFO CAP JON 11.9.

Number	Action	Deliverable	Owner	Due Date
1	Revise CCP-TP-005 *Acceptable Knowledge Documentation.*	Submit to CBFO for review and approval.	CCP Certification Manager	7/15/2015
2	Revise Interface Documents for all host sites with active characterization activities.	Approved host site Interface Documents.	CCP Operations Manager	02/29/2016
3	Train to Procedures: CCP-TP-005, *Acceptable Knowledge Documentation* CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan* CCP-PO-043, *CCP Interface Document Preparation* CCP-PO-004, *CCP/SRS Interface Document* CCP-PO-012, *CCP/LANL Interface Document* CCP-PO-024, *CCP/INL Interface Document* CCP-PO-027, *CCP/TWPC/ORNL Interface Document* CCP-PO-500, *CCP/ANL RH-TRU Waste*	Training determination, training material and documentation of completion (e.g., rosters, required reading etc.). Training records providing objective evidence that at least 80% of the designated staff have successfully completed training to the revised process. Untrained personnel will not be authorized to perform the associated functions.	CCP Support Services Manager	3/29/2016

	Interface Document CCP-PO-501, *CCP/INL RH-TRU Waste Interface Document* CCP-PO-510, *CCP/SNL Interface Document*			

Judgment of Need (JON 33)

Nuclear Waste Partnership (NWP) needs to re-evaluate the quantities, type, and form of exposed combustible emplacement materials used in the waste array and take action to minimize the fire ignition and propagation risks (e.g., eliminate unnecessary materials, and include fire retardant additives).

Approach

NWP will identify exposed combustible materials used in the emplacement of RH and CH waste, and determine actions necessary to eliminate unnecessary materials and/or for treatment with fire retardant additives. The evaluation will consider performance assessment and hazardous waste permit impacts, which may lead to longer term actions and further benefit analysis. Implementation is likely to impact waste handling procedures and material procurement specifications as well as have the potential to impact waste generator processes. The evaluation results will be incorporated into the FHA as appropriate.

Number	Action	Deliverable	Owner	Due Date
1	Identify the exposed combustible materials used in the emplacement of RH and CH waste.	Completed evaluation identifying the materials, including quantities, type and form.	Engineering Manager	7/22/2015
2	Evaluate the identified materials and determine actions necessary to eliminate unnecessary materials and/or treatment with fire retardant additives. Consider potential PA impacts. Recommendations that might impact the PA will be included in a plan for long term actions.	Completed evaluation, including recommendations.	Engineering Manager	8/31/2015
3	Develop implementation plan including the identified actions to minimize the fire ignition and propagation risks in the waste array.	Implementation plan submitted to CBFO.	Engineering and Operations Managers	10/16/2015

Judgment of Need (JON 34)

NWP needs to revise the waste array emplacement strategy to include criteria that limit the risk of fire propagation within the array and to include limiting the quantity of radiological waste that is at-risk from a single fire or explosion event.

Approach

NWP will evaluate the waste array emplacement strategy to identify measures to limit the risk of fire propagation and to limit the quantity of radiological waste that is at-risk from a single fire or explosion event. The evaluation will consider performance assessment and hazardous waste permit impacts, which may lead to longer term actions and further benefit analysis. Implementation is likely to impact waste handling procedures and material procurement specifications as well as have the potential to impact waste generator processes. The evaluation will consider emplacement strategy for future waste receipts, and will not consider currently emplaced waste in closed panels/rooms.

Number	Action	Deliverable	Owner	Due Date
1	Evaluate the waste array emplacement strategy with consideration of the at risk radiological waste to limit the risk of fire propagation and to limit the quantity of radiological waste that is at-risk from a single fire or explosion event. Consider potential PA impacts. Recommendations that might impact the PA will be included in a plan for long term actions.	Completed evaluation, including recommendations.	Engineering, Fire Protection Engineering, and Operations Managers	8/31/2015
2	Develop implementation plan including the identified actions to minimize the fire ignition and propagation risks in the waste array and to limit the quantity of radiological waste that is at-risk from a single fire or explosion event.	Implementation plan submitted to CBFO.	Engineering, Fire Protection Engineering, and Operations Managers	10/16/2015

Judgment of Need (JON 35)

NWP needs to revise the FHA to identify and address all credible fire and explosion scenarios initiated within the waste array underground.

Approach

NWP will revise the FHA to ensure that credible fire and explosion scenarios, initiated within the RH and CH waste arrays and transport paths in the underground, are identified and addressed in the FHA. Revisions to the FHA are coordinated with the CBFO as part of the Fire Protection Program and DSA revisions.

Number	Action	Deliverable	Owner	Due Date
1	NWP will identify credible fire and explosion scenarios initiated within the underground RH and CH waste arrays, including transport paths.	An issued FHA.	Fire Protection Engineering Manager	8/31/2015
2	NWP will evaluate credible fire and explosion scenarios initiated within the underground RH and CH waste arrays, including transport paths.	An issued FHA.	Fire Protection Engineering Manager	8/31/2015

Judgment of Need (JON 36)

NWP needs to reevaluate and revise WIPP FHA to better characterize the fire risks associated with transuranic (TRU) waste packaging during handling and storage. This needs to include reevaluation of actions detailed in the WIPP Recovery Plan.

Approach

NWP will revise the FHA to reflect fire risks associated with waste packaging during handling and storage based on actual experience from the radiological event and will include the ventilation and combustible control limits in place during recovery activities.

Number	Action	Deliverable	Owner	Due Date
1	NWP will revise the FHA to reflect fire risks associated with waste packaging during handling and storage based on actual experience from the radiological event.	Issued FHA.	Fire Protection Engineering Manager	8/31/2015
2	NWP will revise the FHA to reflect the ventilation and combustible control limits in place during recovery activities and waste handling and storage activities.	Issued FHA.	Fire Protection Engineering Manager	8/31/2015

U.S. Department of Energy
Carlsbad Field Office

Corrective Action Plan

Addressing the Accident Investigation Reports of:

the *Underground Salt Haul Truck Fire at the Waste Isolation Pilot Plant, February 5, 2014,*
and
the *Radiological Release Event at the Waste Isolation Pilot Plant, on February 14, 2014*
Revision 1

July 2015

Prepared by: [redacted]
Sean Dunagan, Corrective Action Manager
Carlsbad Field Office

Approved by: [redacted]
Dana Bryson, Acting Manager
Carlsbad Field Office

Approved by: [redacted]
James Hutton, Deputy Assistant Secretary for
Safety, Security, and Quality Programs Office of Environmental Management

Table of Contents

1 Purpose **7**
2 Summary of the Events **7**
2.1 Fire Event 7
2.1.1 Salt Haul Truck Fire AIB Conclusions 8
2.2 Radiation Release Event 9
2.2.1 Radiological Event AIB Conclusions (Phase 1 Radiological Release Report) 10
2.2.2 Radiological Event AIB Conclusions (Phase 2 Radiological Release Report) 11
3 Corrective Action Plan **14**
4 Summary **15**
5 Organization and Management **16**
6 CBFO Corrective Actions to Address the Judgments of Need from the Fire Report **16**
6.1 Emergency Response 17
6.1.1 Judgment of Need: JON 4 17
6.1.2 Judgment of Need: JON 5 19
6.1.3 Judgment of Need: JON 6 21
6.1.4 Judgment of Need: JON 7 22
6.1.5 Judgment of Need: JON 9 24
6.1.6 Judgment of Need: JON 10 26
6.1.7 Judgment of Need: JON 11 27
6.2 Maintenance Program 28
6.2.1 Judgment of Need: JON 14 28

6.2.2 Judgment of Need: JON 17 32
6.3 Fire Protection Program 33
6.3.1 Judgment of Need: JON 20 33
6.3.2 Judgment of Need: JON 21 35
6.3.3 Judgment of Need: JON 22 36
6.4 DOE Programs and Oversight 37
6.4.1 Judgment of Need: JON 24 37
6.4.2 Judgment of Need: JON 25 41
6.4.3 Judgment of Need: JON 26 42
6.4.4 Judgment of Need: JON 32 43
6.5 Safety Program 44
6.5.1 Judgment of Need: JON 33 44
6.5.2 Judgment of Need: JON 34 47
6.5.3 Judgment of Need: JON 35 48
7 CBFO Corrective Actions to Address the Judgments of Need from the Phase 1 Radiological Report 50
7.1 Nuclear Safety Program 51
7.1.1 Judgment of Need: JON 10 51
7.1.2 Judgment of Need: JON 11 54
7.1.3 Judgment of Need: JON 12 55
7.1.4 Judgment of Need: JON 13 56
7.2 Emergency Management 57
7.2.1 Judgment of Need: JON 15 57
7.2.2 Judgment of Need: JON 20 58
7.3 Safety Culture 59

7.3.1 Judgment of Need: JON 24 59
7.4 Conduct of Operations 60
7.4.1 Judgment of Need: JON 28 60
7.5 Maintenance Program 61
7.5.1 Judgment of Need: JON 31 61
7.5.2 Judgment of Need: JON 32 62
7.6 Radiation Protection Program 63
7.6.1 Judgment of Need: JON 36 63
7.7 CBFO Oversight 64
7.7.1 Judgment of Need: JON 40 64
7.7.2 Judgment of Need: JON 41 65
7.7.3 Judgment of Need: JON 42 66
7.7.4 Judgment of Need: JON 43 67
8 CBFO Corrective Actions to Address the Judgments of Need from the Phase 2 Radiological Report 68
8.1 Carlsbad Field Office 69
8.1.1 Judgment of Need: JON 1 69
8.1.2 Judgment of Need: JON 2 71
8.1.3 Judgment of Need: JON 4 75
8.1.4 Judgment of Need: JON 5 76
8.1.5 Judgment of Need: JON 11 77
8.1.6 Judgment of Need: JON 28 83
8.1.7 Judgment of Need: JON 29 86
8.1.8 Judgment of Need: JON 30 88

ACRONYMS

AIB	Accident Investigation Board
AMWTP	Advanced Mixed Waste Treatment Project
CAM	Continuous Air Monitor
CAP	Corrective Action Plan
CAS	Contractor Assurance System
CBFO	Carlsbad Field Office
CCP	Centralized Characterization Program
CMR	Central Monitoring Room
CON	Conclusion of the Accident Investigation Board
CONOPS	Conduct of Operations
DOE	U.S. Department of Energy
DSA	Documented Safety Analysis
EM	Office of Environmental Management
EMCBC	Environmental Management Consolidated Business Center
EM-LA	Office of Environmental management Los Alamos Field Office
FHA	Fire Hazards Analysis
HEPA	High Efficiency Particulate Air
HQ	Headquarters
HWFP	Hazardous Waste Facilities Permit
ICE	Issues Collection and Evaluation
ICS	Incident Command System
IEP	Integrated Evaluation Plan
JON	Judgment of Need
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security, LLC
NA-LA	NNSA Los Alamos Field Office (formerly Los Alamos Site Office- LASO)
NFPA	National Fire Protection Association
NIMS	National Incident Management System
NNSA	National Nuclear Security Administration
NMMP	Nuclear Maintenance Management Program
NWP	Nuclear Waste Partnership LLC
MP	Management Procedure

MSHA	Mine Safety and Health Administration
RCRA	Resource Conservation and Recovery Act
SSO	Safety Systems Oversight
TRU	Transuranic
TSR	Technical Safety Requirement
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan
WCRRF	Waste Characterization, Reduction, and Repackaging Facility
WIPP	Waste Isolation Pilot Plant

1 Purpose

The purpose of this Corrective Action Plan (CAP) is to specify U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) actions for addressing issues identified in the March 2014, accident investigation report for the *Underground Salt Haul Truck Fire at the Waste Isolation Pilot Plant (WIPP) February 5, 2014* (hereafter referred to as the Fire Report) , the April 2014, *Phase 1 Radiological Release Event at the Waste Isolation Pilot Plant on February 14, 2014* (hereafter referred to as the Phase 1 Radiological Report), and the April 2015, *Phase 2 Radiological Release Event at the Waste Isolation Pilot Plant on February 14, 2014* (hereafter referred to as the Phase 2 Radiological Report).

This consolidated CAP specifies the CBFO corrective actions responsive to the three Accident Investigation Boards' reports. Each corrective action includes the associated JON, the resulting approach, the applicable actions to be taken, the deliverables, the action owner (responsible CBFO Program or Division Office, responsible individual by job title), and due dates for completing the actions.

The approving officials for this CAP are the Manager, Carlsbad Field Office and the Deputy Assistant Secretary, Safety, Security, and Quality Programs, Office of Environmental Management.

2 Summary of the Events

2.1 Fire Event

On Wednesday, February 5, 2014, at approximately 10:45 Mountain Standard Time, an underground mine fire involving an EIMCO Haul Truck, 74-U-006B, (salt haul truck) occurred at the DOE WIPP near Carlsbad, New Mexico. There were 86 workers in the mine (underground) when the fire occurred. All workers were safely evacuated. Six workers were transported to the Carlsbad Medical Center for treatment for smoke inhalation and an additional seven workers were treated on-site.

On February 7, 2014, the Deputy Assistant Secretary for Safety, Security, and Quality Programs, DOE, Office of Environmental Management (EM) formally appointed an Accident Investigation Board (AIB) to investigate the underground salt haul truck fire in accordance with DOE Order (O) 225.1B, based on this accident meeting Accident Investigation Criteria 2.d.1 of DOE O 225.1B, Accident Investigations, Appendix A.

The Salt Haul Truck Fire AIB began the investigation on February 10, 2014, and completed the investigation on March 8, 2014. They submitted findings to the Deputy Assistant Secretary for Safety, Security, and Quality Programs Environmental Management on March 11, 2014. On March 14, 2014, the Salt Haul Truck Fire AIB's Report was approved.

2.1.1 Salt Haul Truck Fire AIB Conclusions

The Salt Haul Truck Fire AIB concluded the following causes of the accident:

Direct Cause – the immediate events or conditions that caused the accident.

The Salt Haul Truck Fire AIB identified the direct cause of this accident to be contact between flammable fluids (either hydraulic fluid or diesel fuel) and hot surfaces (most likely the catalytic converter) on the salt haul truck, which resulted in a fire that consumed the engine compartment and two front tires.

Root Cause – causal factors that, if corrected, would prevent recurrence of the same or similar accidents.

The Salt Haul Truck Fire AIB identified the root cause of this accident to be the failure of NWP and the previous management and operations contractor to adequately recognize and mitigate the hazard regarding a fire in the underground. This includes recognition and removal of the buildup of combustibles through inspections and periodic preventative maintenance (e.g., cleaning), and the decision to deactivate the automatic onboard fire suppression system.

Contributing Causes – events or conditions that collectively with other causes increased the likelihood or severity of an accident but that individually did not cause the accident. For the purposes of this investigation, contributing causes include those related to the cause of the fire, as well as those related to the subsequent response.

The Salt Haul Truck Fire AIB identified ten contributing causes to this accident or resultant response:

1. The preventative and corrective maintenance program did not prevent or correct the buildup of combustible fluids on the salt truck. There is a distinct difference between the way waste-handling and non-waste-handling vehicles are maintained.
2. The fire protection program was less than adequate in regard to flowing down upper-tier requirements relative to vehicle fire suppression system actuation from the Baseline Needs Assessment into implementing procedures. There was also an accumulation of combustible materials in the underground in quantities that exceeded the limits specified in the Fire Hazard Analysis (FHA) and implementing procedures. Additionally, the FHA does not provide a comprehensive analysis that addresses all credible underground fire scenarios including a fire located near the Air Intake Shaft.
3. The training and qualification of the operator was inadequate to ensure proper response to a vehicle fire. He did not initially notify the Central Monitoring Room (CMR) that there was a fire or describe the fire's location.
4. The CMR Operations response to the fire, including evaluation and protective actions, was less than adequate.

5. Elements of the emergency preparedness and response program were ineffective.
6. A nuclear versus mine culture exists where there are significant differences in the maintenance of waste-handling versus non-waste-handling equipment.
7. The NWP Contractor Assurance System (CAS) was ineffective in identifying the conditions and maintenance program inadequacies associated with the root cause of this event.
8. The DOE Carlsbad Field Office was ineffective in implementing line management oversight programs and processes that would have identified NWP CAS weaknesses and the conditions associated with the root cause of this event.
9. Repeat deficiencies were identified in DOE and external agencies assessments, e.g., Defense Nuclear Facility Safety Board emergency management, fire protection, maintenance, CBFO oversight, and work planning and control, but were allowed to remain unresolved for extended periods of time without ensuring effective site response.
10. There are elements of the Conduct of Operations (CONOPS) program that demonstrate a lack of rigor and discipline commensurate with the operation of a Hazard Category 2 Facility.

2.2 Radiation Release Event

On Friday, February 14, 2014, there was an incident in the underground repository at the DOE WIPP near Carlsbad, New Mexico, which resulted in the release of americium and plutonium from one or more transuranic (TRU) waste containers into the mine and the environment. The release was detected by an underground continuous air monitor (CAM) and then directed through high-efficiency particulate air (HEPA) filter banks located in the surface exhaust building. However, a measurable portion bypassed the HEPA filters through leaks in two ventilation system dampers and was discharged directly to the environment from an exhaust duct. No personnel were determined to have received external contamination; however, 21 individuals were identified through bioassay to have initially tested positive for low level amounts of internal contamination as of March 28, 2014. Trace amounts of americium and plutonium were detected off-site.

On February 27, 2014, the Deputy Assistant Secretary for Safety, Security, and Quality Programs, DOE, EM, formally appointed an AIB to investigate the radiological release in accordance with DOE O 225.1B, *Accident Investigations*.

The Radiological Event AIB began the investigation on March 3, 2014, completed Phase 1 of the investigation on March 28, 2014, and submitted the report to the Acting Deputy Assistant Secretary for Safety, Security, and Quality Programs, DOE, EM on April 1, 2014. The Phase 1 Radiological Report covers the Radiological Event AIB's conclusions for the release of TRU from the underground to the environment. The Phase1 Radiological Release Event Report was released on April 22, 2014.

2.2.1 Radiological Event AIB Conclusions (Phase 1 Radiological Release Report)

The Phase 1 Radiological Event AIB concluded the following causes of the accident.

Direct Cause: the immediate events or conditions that caused the accident.

The Radiological Event AIB identified the direct cause of this accident to be the breach of at least one TRU waste container in the underground which resulted in airborne radioactivity escaping to the environment downstream of the HEPA filters. Due to restrictions on access to the underground following the event, the exact mechanism of container failure, e.g., back or rib fall, puncture by a failed roof bolt, off-gassing, etc., was unknown at the time the Phase 1 Radiological Report was issued.

Root Cause: causal factors that, if corrected, would prevent recurrence of the same or similar accidents.

The Radiological Event AIB identified the root cause of Phase 1 of the investigation of the release of radioactive material from underground to the environment to be NWP's and CBFO's management failure to fully understand, characterize, and control the radiological hazard. The cumulative effect of inadequacies in ventilation system design and operability compounded by degradation of key safety management programs and safety culture resulted in the release of radioactive material from the underground to the environment, and the delayed/ineffective recognition and response to the release.

Contributing Causes: events or conditions that collectively with other causes increased the likelihood or severity of an accident but that individually did not cause the accident. For the purposes of this investigation, contributing causes include those related to the cause of the fire, as well as those related to the subsequent response.

The Radiological Event AIB identified eight contributing causes to the radiological release to the environment investigated in Phase 1, or resultant response:

1. Implementation of the NWP Conduct of Operations Program is not fully compliant with DOE O 422.1, *Conduct of Operations*, and impacted the identification of abnormal conditions and timely response.
2. NWP does not have an effective Radiation Protection Program in accordance with 10 Code of Federal Regulations (CFR) 835, *Occupational Radiation Protection*, including, but not limited to radiological control technician training, qualification, and requalification, equipment and instrumentation, and audits.
3. NWP does not have an effective maintenance program. The condition of critical equipment and components, including

continuous air monitors, ventilation dampers, fans, sensors, and the primary system status display were degraded to the point where the cumulative impact on overall operational readiness and safety was not recognized or understood.

4. NWP does not have an effective Nuclear Safety Program in accordance with 10 CFR 830 Subpart B, Safety Basis Requirements. There has been a reduction in the conservatism in the Documented Safety Analysis (DSA) hazard/accident analysis and corresponding Technical Safety Requirement (TSR) controls over time. In addition, the DSA and TSRs contain errors, there is a lack of DSA linkage to supporting hazard analysis information, and there is confusion over the back fall accident description in a closed versus open panel.
5. NWP implementation of DOE O 151.1C, *Comprehensive Emergency Management System*, was ineffective. Personnel did not adequately recognize, categorize, or classify the emergency and did not implement adequate protective actions in a timely manner.
6. The current site safety culture does not fully embrace and implement the principles of DOE Guide (G) 450.4-1C, *Integrated Safety Management Guide*. There is a lack of a questioning attitude, reluctance to bring up and document issues, and an acceptance and normalization of degraded equipment and conditions.
7. Execution of the NWP Contractor Assurance System (CAS) in accordance with DOE O 226.1B, *Implementation of Department of Energy Oversight Policy*, was ineffective. Execution of the CAS did not identify precursors to this event or the unacceptable conditions and behaviors documented in this Phase 1 Radiological Report.
8. DOE HQ line management oversight was ineffective. DOE HQ failed to ensure that CBFO was held accountable for correcting repeated identified issues involving radiological protection, nuclear safety, Integrated Safety Management (ISM), maintenance, emergency management, work planning, and control and oversight.

2.2.2 Radiological Event AIB Conclusions (Phase 2 Radiological Release Report)

The Phase 2 Radiological Report covers the Radiological Event AIB's conclusions for the radiological release from transuranic waste container 68660 at the WIPP. The Phase 2 Radiological Release Event Report was released on April 15, 2015, and concluded the following causes of the accident.

Direct Cause: the immediate events or conditions that caused the accident.

The Radiological Event AIB identified the direct cause of this accident to be an exothermic reaction of incompatible materials in LANL waste drum 68660 that led to thermal runaway, which resulted in over-pressurization of the drum, breach of the drum, and release of a portion of the drum's contents (combustible gases, waste, and wheat-based absorbent) into the WIPP underground.

Root Cause: Causal factors that, if corrected, would prevent recurrence of the same or similar accidents. For this accident, the Radiological Event AIB identified both local and systemic root causes.

Local Root Cause: a specific deficiency that, if corrected, would prevent recurrence of the same accident.

The Radiological Event AIB identified the local root cause of the radioactive material release in the WIPP underground to be the failure of LANS to understand and effectively implement the LANL Hazardous Waste Facility Permit and Carlsbad Field Office directed controls. LANL's use of organic, wheat-based absorbent instead of the directed inorganic absorbent such as kitty litter/zeolite clay absorbent in the glovebox operations procedure for nitrate salts resulted in the generation, shipment, and emplacement of a noncompliant, ignitable waste form.

Systemic Root Cause: a deficiency in a management system that, if corrected, would prevent the occurrence of a class of accidents.

The Radiological Event AIB identified the systemic root cause as the Los Alamos Field Office (NA-LA) and National Transuranic Program/Carlsbad Field Office (NTP/CBFO) failure to ensure that LANL had adequately developed and implemented repackaging and treatment procedures that incorporated suitable hazard controls and included a rigorous review and approval process. NA-LA and CBFO did not ensure the adequate flow down of the Resource Conservation and Recovery Act and other upper tier requirements, including the WIPP Hazardous Waste Facility Permit, Attachment C, Waste Analysis Plan, WIPP Waste Acceptance Criteria, and the LANL Hazardous Waste Facility Permit requirements into operating procedures at LANL.

Contributing Causes: events or conditions that collectively with other causes increased the likelihood or severity of an accident but that individually did not cause the accident.

The Radiological Event AIB identified twelve contributing causes to the radiological release investigated in Phase 2:

1. Failure of Los Alamos National Security, LLC (LANS) to implement effective processes for procedure development, review, and change control. Execution of the Waste Characterization, Reduction, and Repackaging Facility (WCRRF) glovebox procedure resulted in a combination of incompatible materials and the generation of an ignitable, noncompliant waste.
2. Failure of Los Alamos National Security, LLC (LANS) to develop and implement adequate processes for hazard identification and control. As a result, an incompatible absorbent was specified and used during nitrate salt bearing waste processing.
3. Failure of the Los Alamos National Security, LLC (LANS) Contractor Assurance System (CAS) to identify weaknesses in the processes for operating procedure development; hazard analysis and control; and review that resulted in an inadequate

glovebox operation procedure for processing the nitrate salt bearing waste.

4. Failure of the Central Characterization Program (CCP) to develop an Acceptable Knowledge (AK) for the mixed inorganic nitrate waste stream (LA-MIN02-V.001) that adequately captured all available information regarding waste generation and subsequent repackaging activities in order to prevent the generation, shipment, and emplacement of corrosive, ignitable, or reactive waste. Specifically, the AK Summary Report did not capture changes made to the Waste Characterization, Reduction, and Repackaging Facility (WCRRF) glovebox procedure. The addition of a secondary waste material was not adequately considered.

5. Failure of Los Alamos Field Office (NA-LA) and the National Transuranic (TRU) Program/Carlsbad Field Office (CBFO) to ensure that the CCP and LANS complied with Resource Conservation and Recovery Act (RCRA) requirements in the WIPP Hazardous Waste Facility Permit (HWFP) and the LANL HWFP, as well as the WIPP Waste Acceptance Criteria (WAC). Examples include the unapproved treatment (neutralization and absorption of liquids) and the addition of incompatible materials. As a result, waste containing incompatible materials was generated and sent to WIPP.

6. Failure of Los Alamos National Security, LLC (LANS), Energy*Solutions*, LLC, and the NNSA Los Alamos Field Office (NA-LA) to ensure that a strong safety culture existed within the Environmental and Waste Management Operations organization at the Los Alamos National Laboratory (LANL). As a result, although there was a questioning attitude, there was a failure to adequately resolve employee concerns which could have identified the generation of noncompliant waste prior to shipment.

7. Failure of the execution of the LANL Unreviewed Safety Question (USQ) process to identify the lack of a hazard analysis of the proposed changes to the Waste Characterization, Reduction, and Repackaging Facility (WCRRF) glovebox waste repackaging procedure (i.e., consistent with Integrated Safety Management (ISM) core functions]), and to recognize that an incompatible reactive nitrate salt bearing waste would be created by using "organic" absorbents. As a result, the Unreviewed Safety Question Determination (USQD) did not ensure that nuclear safety basis documents, including the WCRRF and Area G Basis for Interim Operation (BIO), were updated to evaluate hazards associated with material incompatibility in the nitrate salt-bearing waste stream and to specify preventive or mitigative controls.

8. Failure of NNSA Los Alamos Field Office (NA-LA) to establish and implement adequate line management oversight programs and processes in accordance with DOE Order 226.1B, *Implementation of Department of Energy Oversight Policy*. As a result, weaknesses in Los Alamos National Security, LLC / Energy*Solutions*, LLC programs and waste operations procedures were not identified and corrected which allowed an ignitable, noncompliant nitrate salt-bearing waste to be generated, shipped, and emplaced at WIPP.

9. Failure of DOE Headquarters to perform adequate or effective line management oversight required by DOE Order 435.1, *Radioactive Waste Management*, dated July 9, 1999. As a result, waste containing incompatible materials was generated and sent to WIPP.

10. Failure of Nuclear Waste Partnership LLC (NWP) to ensure that the WIPP Fire Hazard Analysis recognized the potential for a fire starting within the waste array as well as the potential for propagation within the array. As a result, fire protection controls focused on prevention of propagation to the array from external sources (e.g., vehicles) and did not consider the magnitude of the combustible material hazard.
11. Failure of Los Alamos National Security, LLC/Energy*Solutions*, LLC to adequately train and qualify Energy*Solutions*, LLC operators and supervisors in the identification and control of incompatible materials during waste processing. As a result, personnel did not question the instruction to add organic absorbent and other secondary waste items to the nitrate salt- bearing waste.
12. Failure of Energy*Solutions*, LLC operators and Los Alamos National Security, LLC supervisors to effectively execute the stop work process when unexpected conditions, including foaming reactions and smoke during waste processing, were encountered at Waste Characterization, Reduction, and Repackaging Facility (WCRRF). This resulted in waste containing incompatible materials being generated and sent to WIPP.

3 Corrective Action Plan

The designated Action Owners are responsible for coordinating that action, providing status updates to the CBFO Corrective Actions Manager for inclusion in the CBFO Corrective Action Plan Primavera P6 schedule, and for providing objective evidence documenting completion of the actions to the CBFO Corrective Actions Manager.

The CBFO Corrective Action Manager will monitor and report the status of corrective actions through completion to the CBFO Manager. Proposed changes to the corrective actions in this CAP, including due dates, will be made in writing to the CBFO Manager for review and approval. The CBFO Manager will forward the proposed changes to the acting Deputy Assistant Secretary, Safety, Security, and Quality Programs, Office of Environmental Management for review and approval.

Corrective actions requiring training will be considered complete when 80% of the target audience has completed the training. Those who have not completed the training will not independently perform the associated function until the training is complete for that individual.

Several corrective actions generate implementation plans. Implementation plans created for the purpose of satisfying these corrective actions will include:

- scope,
- schedule,
- actions to be implemented,
- training, and
- others, as determined by the implementation plan.

Completion of the implementation plan includes input of actions into the CBFO Issues Collection and Evaluation (ICE) system for the purpose of tracking and closeout.

The CBFO Corrective Actions Manager will determine that the provided objective evidence for each corrective action is responsive to the associated JONs identified in this CAP. The CBFO Manager will then forward the objective evidence to the AIB appointing official (Deputy Assistant Secretary, Safety, Security, and Quality Programs, Office of Environmental Management) for closure. The CBFO Corrective Action Manager will coordinate with the CBFO Manager and AIB appointing official to assign reviewers and to establish corrective action implementation assessment teams. The assessment teams will determine that the corrective actions are completed and implemented to satisfy the JONs identified in the two AIB reports. Assessment teams will provide assessment reports to the CBFO Manager and the AIB appointing official documenting the effective implementation of the corrective actions.

4 Summary

The actions described in this CAP address the JONs directed to CBFO from the Fire Report, the Phase 1 Radiological Report, and the Phase 2 Radiological Report. The CAP is consistent with the CBFO's commitment to safety and protection of the environment.

The CBFO employees will assert control of the plan and its actions from initiation to closure and verification of effectiveness. The CBFO believes these actions are responsive and appropriate for implementing the overall intent of the issues in the three accident investigation reports.

5 Organization and Management

The CBFO Manager is responsible for the execution of this CAP. The CBFO Corrective Actions Manager will provide a quarterly update of the status of the associated actions to the CBFO Manager via a verbal briefing. The Action Owners will coordinate the actions identified in this report and track their status and closure on an ongoing basis via a P6 schedule.

6 CBFO Corrective Actions to Address the Judgments of Need from the Fire Report

The corrective actions are addressed in the order they were presented in the Fire Report;

- Emergency Response (JON 4-7, & 9-11)
- Maintenance Program (JON 14 & 17)
- Fire Protection Program (JON 20-22)
- DOE Programs and Oversight (JON 24-26, & 32)
- Safety Program (JON 33-35)

6.1 Emergency Response

6.1.1 Judgment of Need: JON 4

JON 4: *NWP and CBFO need to evaluate their corrective action plans for findings and opportunities for improvement identified in previous external reviews, and take action to bring their emergency management program into compliance with requirements.*

Approach

The CBFO will develop a new procedure for responding to reviews, surveillances, and audits conducted by parties outside of the CBFO to ensure issues are tracked to completion. CBFO and EM-40 personnel will review prior assessments received between July 2008 and June 2013 to ensure issues have been address.

Corrective Actions for JON 4

Number	Action	Deliverable	Action Owner	Due Date
1	CBFO Assistant Manager for the Office of Operations Oversight's designated staff will read DOE O 151.1C, *Comprehensive Emergency Management System* to re-familiarize themselves with the requirements of the order.	Required reading documentation with signatures showing at least 80% of the CBFO Assistant Manager for the Office of Operations Oversight's designated staff have read and understood DOE O 151.1C, and 30 CFR Part 57.	CBFO Assistant Manager for the Office of Operations Oversight	01/16/2015

Number	Action	Deliverable	Action Owner	Due Date
2	Develop and implement a new CBFO procedure for responding to external reviews, surveillances, and audits conducted by parties outside of the CBFO. This procedure will cover obtaining written reports for the CBFO Records Center, issue assignment and tracking; issue trending, issue closure, issue closure documentation, and record keeping requirements.	External Reviews, Surveillances, and Audits Response Procedure	CBFO Quality Assurance Director	04/01/2015
3	Formally train CBFO Manager's designated staff on the new CBFO External Reviews, Surveillances, and Audits Response Procedure.	Training records providing objective evidence that at least 80% of the CBFO Manager's designated staff have successfully completed training to the new CBFO External Reviews, Surveillances, and Audits Response Procedure.	CBFO Manager	05/01/2015
4	CBFO and EM-40 personnel will conduct a joint evaluation of outstanding issues and opportunities for improvement identified in assessments received between July 2008 and June 2013 to ensure they have been addressed.	Report documenting the results of the joint evaluation.	CBFO Assistant Manager for the Office of Operations Oversight	9/30/2015

6.1.2 Judgment of Need: JON 5

JON 5: *NWP and CBFO need to correct their activation, notification, classification, and categorization protocols to be in full compliance with DOE O 151.1C and then provide training for all applicable personnel.*

Approach

The CBFO has directed NWP to develop an integrated WIPP Emergency Management Program that is fully compliant with DOE O 151.1C, Comprehensive Emergency Management System and other pertinent requirements. The CBFO Safety Programs Division Director and staff will oversee and participate in the development of a new, fully compliant WIPP Emergency Management Program. A fully compliant and integrated WIPP Emergency Management Program will ensure that NWP and the CBFO can respond effectively and efficiently to operational emergencies; ensure emergencies are recognized, categorized, and as necessary classified promptly to ensure appropriate response measures are taken to protect workers, the public, and the environment. CBFO and NWP will integrate their emergency response programs into a single, NWP administered WIPP Emergency Response and Operations procedure, which defines roles for CBFO, NWP and TRANSCOM, responsibilities, training and operational guidelines; also providing implementation planning and operational tools, to comply with DOE O 151.1C, Comprehensive Emergency Management System.

Corrective Actions for JON 5

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO Assistant Manager for the Office of Operations Oversight will oversee the development of fully compliant integrated WIPP emergency management program. The WIPP emergency management program will include both NWP and CBFO roles and responsibilities. Oversight will include review of WIPP emergency management program plans, to ensure compliance with DOE O 151.1C, *Comprehensive Emergency Management System*, the National Incident Management System (NIMS) Incident Command System (ICS) requirements, and Mine Safety and Health Administration	CBFO Document Review Records providing proof of a comprehensive CBFO adequacy review of NWP WIPP emergency management program by the CBFO Assistant Manager for the Office of Operations Oversight's designated staff ensuring the flow-down of requirements to new WIPP emergency management plans from DOE O 151.1C, NIMS ICS, and MSHA requirements.	CBFO Assistant Manager for the Office of Operations Oversight	05/30/2015

Number	Action	Deliverable	Action Owner	Due Date
	(MSHA) requirements.			
2	Oversee the development of a NWP administered WIPP Emergency Response and Operations procedure, which defines roles for CBFO, NWP and TRANSCOM, responsibilities, training and operational guidelines; also providing implementation planning and operational tools, to comply with DOE O 151.1C, *Comprehensive Emergency Management System*.	CBFO Document Review Records providing proof of a comprehensive CBFO adequacy review of the WIPP Emergency Response and Operations procedure.	CBFO Assistant Manager for the Office of Operations Oversight	05/30/2015
3	NWP Procedures implementing the new WIPP emergency management program plans will be reviewed to ensure adequate flow-down of program requirements including activation, notification, classification, and categorization protocols.	CBFO Document Review Records providing proof of a comprehensive CBFO adequacy review of NWP procedures implementing the new WIPP emergency management plans.	CBFO Assistant Manager for the Office of Operations Oversight	06/15/2015
4	CBFO Manager's designated staff will complete NWP administered training for the WIPP Emergency Response and Operations procedure.	Training records for CBFO staff.	CBFO Manager	06/30/2015

6.1.3 Judgment of Need: JON 6

JON 6: *NWP and CBFO need to improve the content of site-specific EALs to expand on the information provided in the standard EALs contained in DOE O 151.1C.*

Approach

Actions for development of EALs are identified in NWP Fire Report JON 6. These actions will be overseen by CBFO oversight staff as described in CBFO Fire Report JON 5.

Corrective Actions for JON 6

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 5, action 1.			

6.1.4 Judgment of Need: JON 7

JON 7: *NWP and CBFO need to develop and implement an Incident Command System (ICS) for the EOC/CMR that is compliant with DOE O 151.1C and is capable of assuming command and control for all anticipated emergencies.*

Approach

The CBFO Emergency Response Manager will oversee and participate in the development of a new Comprehensive WIPP Emergency Management Program that is fully compliant with DOE O 151.1C, Comprehensive Emergency Management System. As required by the Order, the NIMS "flexible" ICS will be incorporated to ensure that individuals with primary responsibility positions are identified by ICS standardized position titles and the responsibilities of each position are defined. CBFO and NWP will integrate their emergency response programs into a single, NWP administered WIPP Emergency Response and Operations procedure, which defines roles for CBFO, NWP and TRANSCOM, responsibilities, training and operational guidelines; also providing implementation planning and operational tools, to comply with DOE O 151.1C, *Comprehensive Emergency Management System.*

Corrective Actions for JON 7

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 4, action 1.			

1	CBFO Assistant Manager for the Office of Operations Oversight's designated staff will successfully complete the following National Incident Management System (NIMS) Incident Command System (ICS) Training Courses.
	• IS-700.a: National Incident Management System, (NIMS) An Introduction
	• ICS 100
	  ○ IS-100.b: Introduction to Incident Command System, **or**
	  ○ IS-100.FWA: Intro to
		Documentation demonstrating successful completion of ICS Training Courses IS-700.a, IS-100.b **or** IS-100.FWA, and IS-200.b.	CBFO Assistant Manager for the Office of Operations Oversight	01/30/2015

Number	Action	Deliverable	Action Owner	Due Date
	Incident Command System (IS-100) for Federal Workers • IS-200.b: ICS for Single Resources and Initial Action Incidents Completion of these courses is necessary to obtain and demonstrate core competency for providing oversight of the WIPP Emergency Management Program.			
	See CBFO Fire Report JON 5, action 1 and 2.			

6.1.5 Judgment of Need: JON 9

JON 9: *NWP, CBFO and DOE HQ need to clearly define expectations for responding to fires in the U/G, including incipient and beyond incipient stage fires.*

Approach

The CBFO has directed NWP to develop a new WIPP Fire Protection Program that is fully compliant with DOE O 420.1C, *Facility Safety*, DOE-STD-1066-2012, *Fire Protection*, 30 CFR Part 57, *Safety and Health Standards Underground Metal and Nonmetal Mines*, and applicable National Fire Protection Association (NFPA) codes and standards. The CBFO Facility Engineering Division Director and staff will oversee and participate in the development of the new, fully compliant WIPP Fire Protection Program, which will include a clear definition of expectations for responding to fires in the underground, including incipient and beyond incipient stage fires.

Corrective Actions for JON 9

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO Assistant Manager for the Office of Operations Oversight's designated staff will read DOE O 420.1C, *Facility Safety*, DOE-STD-1066-2012, *Fire Protection*, and 30 CFR Part 57, *Safety and Health Standards Underground Metal and Nonmetal Mines*, to re-familiarize themselves with the requirements of the orders. In addition, a required briefing will be held by CBFO Subject Matter Experts that explain the requirements of the documents and how they apply to WIPP.	Required reading documentation with signatures showing at least 80% of the Assistant Manager for the Office of Operations Oversight's designated staff have read and understood DOE O 420.1C, DOE-STD-1066-2021, and 30 CFR Part 57, and attended the required briefing.	CBFO Assistant Manager for the Office of Operations Oversight	01/16/2015

Number	Action	Deliverable	Action Owner	Due Date
2	The CBFO Fire Protection SSO will oversee the development of the new WIPP Fire Protection Program to ensure that applicable regulations, codes, DOE O 420.1C, *Facility Safety*, DOE-STD-1066-2012, *Fire Protection*, and 30 CFR Part 57, *Safety and Health Standards Underground Metal and Nonmetal Mines* are addressed to the extent applicable to WIPP surface structures and the underground. Oversight will include documented reviews of the new WIPP Fire Protection Program and plans to ensure flow down of requirements from DOE O 420.1C, DOE-STD-1066-2012 and 30 CFR Part 57.	CBFO Document Review Records providing proof of a comprehensive CBFO adequacy review of the WIPP Fire Protection Program and plans by the CBFO Fire Protection SSO to ensure flow down of requirements from DOE O 420.1C, DOE-STD-1066-2012 and 30 CFR Part 57.	CBFO Assistant Manager for the Office of Operations Oversight	30 days after NWP submittal of the Fire Protection Program and Plan revisions for approval
3	The CBFO Fire Protection SSO will review the NWP Fire Hazard Analysis (FHA) document to ensure it is written in compliance with Section 7.1 and Appendix B of DOE-STD-1066-2012.	CBFO Document Review Records providing proof of a comprehensive CBFO adequacy review of the NWP FHA.	CBFO Assistant Manager for the Office of Operations Oversight	30 days after NWP submittal of a final Fire Hazards Analysis
4	The CBFO Fire Protection SSO will work with NWP and DOE HQ to ensure that NWP develop/revise and implement training and procedures that clearly define expectations for responding to fires in the underground, including incipient and beyond incipient stage fires.	CBFO Document Review Record of NWP procedures and training plans for defining expectations for responding to fires in the underground, including incipient and beyond incipient stage fires.	CBFO Assistant Manager for the Office of Operations Oversight	30 days after NWP final approval of associated procedures and training plans.

6.1.6 Judgment of Need: JON 10

JON 10: *NWP and CBFO need to develop and implement a training program that includes hands-on training in the use of personal safety equipment, e.g., self-rescuers, SCSRs, portable fire extinguishers, etc.*

Approach

The CBFO has directed NWP to develop and implement a training program that includes hands-on training in the use of personal safety equipment for personnel with unescorted access to the underground. The CBFO oversight staff will oversee development of this training program.

Corrective Actions for JON 10

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO Fire Protection SSO will ensure NWP has procedures and training in place that includes hands-on training in the use of use of personal safety equipment, (e.g. self-rescuers, SCSRs, portable fire extinguishers, etc.).	Documentation of oversight activities.	CBFO Assistant Manager for the Office of Operations Oversight	12/12/2014

6.1.7 Judgment of Need: JON 11

JON 11: *NWP and CBFO need to improve and implement an integrated drill and exercise program that includes all elements of the ICS, including the Mine Rescue Team (MRT), First Line Initial Response Team (FLIRT) and mutual aid; unannounced drills and exercises; donning of self- rescuers/SCSRs; and full evacuation of the U/G.*

Approach

The CBFO has directed NWP to develop and implement a comprehensive drill and exercise program that includes all elements of the National Incident Management System and Incident Command System. The CBFO oversight staff will oversee development of this drill and exercise program.

Corrective Actions for JON 11

Number	Action	Deliverable	Action Owner	Due Date
1	Oversee the NWP development of an integrated drill and exercise program that includes all elements of the National Incident Management System and Incident Command System, and implementation of these activities in accordance with DOE orders and regulatory requirements.	Documented oversight activities.	CBFO Assistant Manager for the Office of Operations Oversight	04/30/2015

6.2 Maintenance Program

6.2.1 Judgment of Need: JON 14

JON 14: *NWP and CBFO need to develop and implement a rigorous process that effectively evaluates:*

- *changes to facilities, equipment, and operations for their impact on safety, e.g., plant operations review process;*
- *impairment and corresponding compensatory measures on safety-related equipment; and*
- *the impact of different approaches in maintaining waste-handling and non-waste-handling equipment.*

Approach

The CBFO will develop a new CBFO Contractor Oversight Plan to ensure the flow down of DOE O 226.1B, *Implementation of the Department of Energy Oversight Policy.* The Plan will address evaluations of changes to WIPP facilities, equipment, and operations and their impact on safety, and the evaluation and the timely correction of impaired or out-of-service equipment. DOE oversight staff will be trained to the requirements of DOE O 430.1B, *Life Cycle Asset Management*, and DOE O 433.1B, *Maintenance Management Program for DOE Nuclear Facilities*, in preparation for performing oversight activities associated with maintenance and configuration control activities. CBFO staff previously completed training of DOE G 424.1-1, *Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements*.

Corrective Actions for JON 14

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO Assistant Manager for the Office of Operations Oversight's designated staff will read DOE O 430.1B, *Life Cycle Asset Management*, and DOE O 433.1B, *Maintenance Management Program for DOE Nuclear Facilities* to re-familiarize themselves with the requirements of the orders.	Required reading documentation with signatures showing at least 80% of the CBFO Assistant Manager for the Office of Operations Oversight designated staff have read and understood DOE O 430.1B and 433.1B.	CBFO Assistant Manager for the Office of Operations Oversight	01/16/2015
2	The CBFO Assistant Manager for the Office of Operations Oversight's designated staff will successfully complete the DOE Self-Study Program for DOE O 433.1, *Maintenance Management Program for*	Documentation demonstrating successful completion of the training course.	CBFO Assistant Manager for the Office of Operations	01/30/2015

Number	Action	Deliverable	Action Owner	Due Date
	DOE Nuclear Facilities, to obtain and demonstrate core competency for providing oversight of the WIPP Maintenance Program activities.		Oversight	
3	Utilizing benchmark examples of contractor assessment and oversight programs at other DOE facilities as a basis, develop a new CBFO Contractor Oversight Plan to: 1. ensure the flow down of DOE O 226.1B requirements; 2. establish requirements for oversight and evaluation of changes to WIPP facilities, equipment and operations, and evaluation of their impact on safety and safety-related systems; 3. require comprehensive and timely evaluation and correction of impaired or out-of-service equipment; 4. establish criteria and process for prioritizing planned oversight activities and determining the appropriate level of oversight rigor (operational awareness, assessment); 5. specify the process for planning, conducting, and documenting oversight evaluations; 6. identify an issues management system capable of categorizing issues, communicating issues effectively to management and	CBFO *Contractor Oversight Plan*.	CBFO Assistant Manager for the Office of Operations Oversight	03/16/2015

Number	Action	Deliverable	Action Owner	Due Date
	contractors, ensuring that issues are evaluated and corrected in a timely manner to prevent recurrence, and a mechanism for tracking and trending for feedback and improvement; and 7. provide guides and checklists with specific lines of inquiry for each system and functional area for CBFO contractor oversight personnel to use for conducting oversight activities (e.g., OA, assessments, surveillances, etc.).			
4	Formally train CBFO Manager's designated staff on the new CBFO *Contractor Oversight Plan* to obtain and demonstrate core competency for providing oversight.	Training records providing objective evidence that at least 80% of the CBFO Manager's designated staff have successfully completed training to the new CBFO Contractor Oversight Plan.	CBFO Manager	03/30/2015
5	Develop CBFO procedure *Operational Awareness and Issues Management*, MP 10.9, for identifying, communicating, and managing issues to resolution and DOE/CBFO 14-3533, *Issues Collection and Evaluation Users' Manual*.	Approved procedure MP 10.9 and DOE/CBFO 14-3533.	CBFO Quality Assurance Director	10/02/2014
6	Provide training to CBFO Assistant Manager for the Office of Operations Oversight's designated staff on MP 10.9 and DOE/CBFO 14-3533.	Training records showing at least 80% of the CBFO Assistant Manager for the Office of Operations Oversight's designated staff have successfully completed training on MP 10.9 and DOE/CBFO 14-3533.	CBFO Assistant Manager for the Office of Operations Oversight	10/09/2014

Number	Action	Deliverable	Action Owner	Due Date
7	Provide input to the FY16 Integrated Evaluation Plan (IEP) in accordance with the requirements of the new CBFO *Contractor Oversight Plan*. Oversight activities will include the NWP Nuclear Maintenance Management Program (NMMP) description documentation identified processes for developing, implementing, managing, and maintaining the master equipment list; planning, scheduling, coordinating and controlling maintenance activities and properly emphasizing equipment availability; and controlling approved modifications and preventing unauthorized modifications to safety structures, systems and components to ensure all elements of DOE O 433.1B, *Maintenance Management Program for DOE Nuclear Facilities*, are adequately covered.	List of oversight activities of the NWP Nuclear Maintenance Management Program for inclusion in the FY16 IEP.	CBFO Assistant Manager for the Office of Operations Oversight	10/15/2015

6.2.2 Judgment of Need: JON 17

JON 17: *CBFO needs to ensure that its contractor oversight structure includes elements for comprehensive and timely evaluation and correction of impaired or out-of-service equipment.*

Approach

As with maintenance programs, evaluation and correction of impaired or out-of-service equipment is a NWP program. Therefore, CBFO oversight staff, through the actions of CBFO Fire Report JON 14, will ensure the contractor oversight structure includes elements for comprehensive and timely evaluation and correction of impaired or out-of-service equipment.

Corrective Actions for JON 17

Number	Action	Deliverable	Action Owner	Due Date
	See actions for CBFO Fire Report JON 14, action 3 (3) and 7.			

6.3 Fire Protection Program

6.3.1 Judgment of Need: JON 20

JON 20: *NWP and CBFO need to perform an integrated analysis of credible U/G fire scenarios and develop corresponding response actions that comply with DOE and MSHA requirements. The analysis needs to include formal disposition regarding the installation of an automatic fire suppression system in the mine.*

Approach

The CBFO Fire Protection SSO will review the NWP Fire Hazard Analysis, Baseline Needs Assessment and Emergency Planning Hazard Assessment to ensure credible underground fire scenarios and corresponding response actions comply with DOE and MSHA requirements. This review will also ensure the disposition of the installation of an automatic fire suppression system in the underground.

Corrective Actions for JON 20

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO Fire Protection SSO will oversee NWP evaluation of fire suppression systems to be used in the underground that are appropriate to the analyzed fire hazard. Systems will provide the level of safety specified in DOE-STD-1066-2012, *Fire Protection*.	Documented oversight activities.	CBFO Assistant Manager for the Office of Operations Oversight	In conjunction with NWP during the selection of fire suppression systems and complete review of NWP documents 30 days after they are submitted.

Number	Action	Deliverable	Action Owner	Due Date
2	The CBFO Fire Protection and Ventilation SSO will ensure NWP has fully analyzed credible underground fire scenarios through the review of the NWP Fire Hazard Analysis, the Baseline Needs Assessment and Emergency Planning Hazard Assessment. This analysis will also include integration of ventilation design and control door operations within the underground.	Documented oversight activities.	CBFO Assistant Manager for the Office of Operations Oversight	30 days after NWP submittal of the NWP Fire Hazard Analysis, Baseline Needs Assessment and Emergency Planning Hazard Assessment

6.3.2 Judgment of Need: JON 21

JON 21: *NWP and CBFO need to review the combustible control program and complete corrective actions that demonstrate compliance with program requirements. These issues remain unresolved from prior internal and external reviews.*

Approach

The CBFO Fire Protection SSO will review the NWP Fire Hazard Analysis for adequacy of the combustible control program. In addition, the CBFO oversight staff will perform periodic operational awareness walk-throughs and inspections of the NWP combustible control program.

Corrective Actions for JON 21

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 9, action 2 and 3.			
1	The CBFO Fire Protection SSO, and Facility Representatives will perform periodic (not to exceed monthly) operational awareness walk-throughs and inspections to ensure combustible material loading is controlled in the WIPP underground.	Documented oversight assessments.	CBFO Assistant Manager for the Office of Operations Oversight	12/01/2015
2	CBFO Fire Protection SSO will evaluate the NWP Contractor Assurance System for combustible controls.	Documented oversight assessments, at least quarterly.	CBFO Assistant Manager for the Office of Operations Oversight	12/01/2015

6.3.3 Judgment of Need: JON 22

JON 22: *NWP and CBFO need to evaluate and address deficiencies in housekeeping to ensure unobstructed egress and clear visibility of emergency egress strobes, reflectors, SCSR lights, etc.*

Approach

The CBFO oversight staff will perform periodic operational awareness walk-throughs and inspections of the NWP housekeeping program.

Corrective Actions for JON 22

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO Fire Protection SSO, and Facilities Representatives will perform periodic (not to exceed monthly) operational awareness oversight to identify housekeeping conditions that impede, or potentially impede, egress from the underground and ensure emergency egress strobes, reflectors, and SCSR lights are clearly visible.	Documented oversight assessments.	CBFO Assistant Manager for the Office of Operations Oversight	12/01/2015
2	CBFO Fire Protection SSO will evaluate the NWP Contractor Assurance System for housekeeping.	Documented oversight assessments, at least quarterly.	CBFO Assistant Manager for the Office of Operations Oversight	12/01/2015

6.4 DOE Programs and Oversight

6.4.1 Judgment of Need: JON 24

JON 24: *CBFO needs to establish and implement an effective line management oversight program and processes that meet the requirements of DOE O 226.1B and hold personnel accountable for implementing those programs and processes.*

Approach

The CBFO Manager has established the Office of Operations Oversight to segregate operations, safety, engineering and environmental oversight for WIPP facility operations from programmatic production activities to enhance oversight independence. This newly established Office of Operations Oversight will develop and implement a new Contractor oversight program that fully implements the requirements of DOE O 226.1B, Implementation of the Department of Energy Oversight Policy. The new Contractor Oversight Program will ensure that processes for planning, conducting, and documenting oversight evaluations of NWP programs and activities are developed; issues are evaluated, corrected to prevent recurrence and communicated to management in a timely manner; and CBFO oversight personnel are adequately qualified and trained to perform their oversight function. The CBFO Manager, along with the Office Assistant Managers and Division Directors will hold personnel accountable for implementation of the oversight program by revising position descriptions for their staff to identify the expected oversight functions for the position.

Corrective Actions for JON 24

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 14, actions 3 and 4.			
1	Evaluate the current CBFO organizational structure and identify specific staffing needs related to line management, technical discipline, current oversight functions, and overall organizational and overall organizational performance and effectiveness.	Transmittal of proposed organizational changes to EM for approval. EM Approval to Reorganize Offices at the Carlsbad Field Office.	CBFO Manager	06/09/2014
2	Establish an Office of Operations Oversight to segregate the programmatic element from the oversight element.	EM Approval to Reorganize Offices at the Carlsbad Field Office and letter from CBFO Manager to CBFO staff	CBFO Manager	Positions will be filled by 6/1/2015

Number	Action	Deliverable	Action Owner	Due Date
	The Office of Operations Oversight will be responsible for oversight of industrial safety, environmental compliance, mine safety, electrical safety, conduct of operations, engineering and nuclear safety including maintaining all aspects of the Documented Safety Basis. The Office of Operations Oversight will obtain and maintain federal expertise to perform these government oversight functions.	announcing the reorganization. Revised Functional Responsibilities and Authority Manual with new responsibilities from CBFO reorganization. Fill the remainder of the vacant positions (14 of the 22 positions remain unfilled).		
3	The CBFO Assistant Manager to the Office of Operations Oversight's designated staff will read DOE O 226.1B, *Implementation of the Department of Energy Oversight Policy,* to re-familiarize themselves with the requirements of the order. In addition, a required briefing will be held by CBFO Subject Matter Experts that explain the requirements of the Policy, Order, and associated Guide and how they apply to WIPP.	Training records indicating at least 80% of the Assistant Manager for the Office of Operations Oversight's designated staff have read DOE O 226.1B, and attended the required briefing.	CBFO Assistant Manager for the Office of Operations Oversight	02/01/2015
4	The CBFO Assistant Manager to the Office of Operations Oversight's designated staff will successfully complete DOE National Training Center courses SAF-384, *DOE Oversight and Implementation*, and SAF-385, *Assessment Techniques*, to obtain and	Documentation demonstrating successful completion of DOE national training courses SAF-384 and SAF-385 prior to performing oversight activities.	CBFO Assistant Manager for the Office of Operations Oversight	03/31/2015

Number	Action	Deliverable	Action Owner	Due Date
	demonstrate core competency for providing DOE oversight activities.			
5	Develop and revise qualification cards, as necessary, for CBFO personnel performing oversight of facility systems, operations, and safety management programs.	New and revised CBFO qualification cards for oversight personnel.	CBFO Assistant Manager for the Office of Operations Oversight	09/30/2015
6	Qualify personnel to the new qualification cards.	Objective evidence of qualification. Establish qualification dates in accordance with TQP process.	CBFO Assistant Manager for the Office of Operations Oversight	09/30/2015
7	Evaluate the FY15 Integrated Evaluation Plan (IEP) against the requirements of the new CBFO *Contractor Oversight Plan*.	Documentation of the evaluation of the FY15 IEP.	CBFO Assistant Manager for the Office of Operations Oversight	06/15/2015
8	Revise and implement CBFO *Document Review*, MP 4.2 to establish a method for conducting reviews of external documents, except for reviews performed in accordance with CBFO *Operational Awareness and Issues Management*, MP 10.9. The change to MP 4.2 will include requirements for documenting comments, resolving comments, and submitting records.	Revised CBFO *Document Review* procedure MP 4.2.	CBFO Assistant Manager for the Office of Program Management and National TRU Program	01/30/2015

Number	Action	Deliverable	Action Owner	Due Date
9	Formally train CBFO personnel on the revised CBFO *Document Review, MP 4.2.*	Training records providing objective evidence that at least 80% of the CBFO Assistant Manager for the Office of Operations Oversight's designated staff have successfully completed training to the revised CBFO *Document Review*, MP 4.2.	CBFO Manager	03/01/2015
10	The CBFO Manager will hold personnel accountable for implementing oversight activities.	Direction from CBFO Manager to Office Assistant Managers and Division Directors	CBFO Manager	05/30/2015
11	Review and revise Office Assistant Managers and Division Directors position descriptions to identify expected oversight functions of the position.	Revised position descriptions and/or memo documenting evaluation of position descriptions.	CBFO Business Operations Director	05/30/2015
12	Review and revise non-supervisory position descriptions in each CBFO office and division to identify expected oversight functions of the position.	Revised position descriptions and/or memo documenting evaluation of position descriptions.	CBFO Business Operations Director	05/30/2015

6.4.2 Judgment of Need: JON 25

JON 25: *CBFO needs to accelerate the implementation of a mechanism for all levels of CBFO staff to document, communicate, track, and close issues both internally and with NWP.*

Approach

The CBFO will develop a new management procedure and user's manual for the identification, documentation, reporting and correction of issues.

Corrective Actions for JON 25

Number	Action	Deliverable	Action Owner	Due Date
1	Develop CBFO procedure *Operational Awareness and Issues Management*, MP 10.9, for identifying, communicating, and managing issues to resolution and DOE/CBFO 14-3533, *Issues Collection and Evaluation Users' Manual*. Provide training to CBFO Assistant Manager for the Office of Operations Oversight's designated staff on MP 10.9 and DOE/CBFO 14-3533.	Approved procedure MP 10.9 and DOE/CBFO 14-3533; and training records showing at least 80% of the CBFO Assistant Manager for the Office of Operations Oversight's designated staff have successfully completed training on MP 10.9 and DOE/CBFO 14-3533.	CBFO Quality Assurance Director	10/09/2014

6.4.3 Judgment of Need: JON 26

JON 26: *The CBFO Site Manager needs to institutionalize and communicate expectations for the identification, documentation, reporting, and correction of issues.*

Approach

The CBFO Site Manager will communicate their expectations for the identification, documentation, reporting and correction of issues through development of the new CBFO Contractor Oversight Plan, and associated procedures.

Corrective Actions for JON 26

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 14, action 3 (6), and JON 25.			

6.4.4 Judgment of Need: JON 32

JON 32: The *EMCBC and CBFO need to develop and implement clear expectations and a schedule for EMCBC to provide support in the areas of regulatory compliance, safety management systems, preparation of program procedures and plans, quality assurance, lessons learned, contractor assurance, technical support, DOE oversight assistance, etc.*

Approach

The CBFO Business Operations Director will perform a staffing resources needs assessment and communicate those needs to EMCBC in order to develop a schedule for support through the Service Level Agreement.

Corrective Actions for JON 32

Number	Action	Deliverable	Action Owner	Due Date
1	CBFO Business Operations Director will perform a resource needs assessment to determine the EMCBC resources needed to provide support in the area of Environmental Safety Health & Quality Team, as defined in the Service Level Agreement. The CBFO Business Operations Director will communicate these needs to the EMCBC along with a proposed schedule for the support.	Transmittal of CBFO resource needs assessment to EMCBC, along with a proposed schedule for support.	CBFO Business Operations Director	02/15/2015
2	CBFO Business Operations Director and EMCBC will revise the service level agreement to address CBFO's resource needs assessment and proposed schedule.	Approved EMCBC Service Level Agreement with a schedule for providing support per the CBFO resource needs assessment.	CBFO Business Operations Director	03/15/2015

6.5 Safety Program

6.5.1 Judgment of Need: JON 33

JON 33: *NWP and CBFO need to evaluate and correct weaknesses in the CONOPS program and its implementation, particularly with regard to flow-down of requirements from upper-tier documents, procedure content and compliance, and expert-based decision making.*

Approach

The CBFO staff will review and approve the NWP Conduct of Operations matrix to ensure the matrix adequately demonstrates conformance with DOE O 422.1. In addition CBFO staff will review the procedures and plans listed in that matrix to ensure the appropriate flow-down of requirements. Finally, CBFO staff will provide input to the FY 16 Integrated Evaluation Plan to ensure compliance with DOE O 422.1.

Corrective Actions for JON 33

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO Assistant Manager to the Office of Operations Oversight and designated staff will read DOE O 422.1, *Conduct of Operations*, to re-familiarize themselves with the requirements of the order.	Training records indicating that at least 80% of the CBFO Assistant Manager to the Office of Operations Oversight's designated staff have read and understood DOE O 422.	CBFO Assistant Manager for the Office of Operations Oversight	01/16/2015
2	The CBFO Assistant Manager to the Office of Operations Oversight's designated staff will successfully complete DOE National Training Center course SAF-261, *Conduct of Operations*, to obtain and demonstrate core competency for providing DOE oversight activities.	Documentation demonstrating at that at least 80% of the CBFO Assistant Manager to the Office of Operations Oversight's designated staff have successfully completed SAF-261.	CBFO Assistant Manager for the Office of Operations Oversight	05/30/2015

Number	Action	Deliverable	Action Owner	Due Date
3	Review and approve the NWP Conduct of Operations Matrix to ensure the matrix adequately demonstrates conformance with DOE O 422.1, *Conduct of Operations*.	CBFO Document Review Records providing proof of a comprehensive CBFO adequacy review of the Conduct of Operations Matrix and Approved NWP Conduct of Operations Matrix.	CBFO Assistant Manager for the Office of Operations Oversight	30 days after NWP submittal of their final Conduct of Operations Matrix
4	Procedures and program plans listed in the NWP Conduct of Operations Matrix will be formally reviewed by CBFO to ensure adequate flow-down of requirements as well as procedure content and compliance in order to assess effective implementation prior to resumption of normal WIPP waste emplacement operations.	CBFO Document Review Records providing proof of a comprehensive CBFO adequacy review of the NWP plans and procedures listed in the Conduct of Operations Matrix.	CBFO Assistant Manager for the Office of Operations Oversight	30 days after NWP submittal of their final Conduct of Operations Matrix
5	Provide input to the FY16 Integrated Evaluation Plan (IEP) in accordance with the requirements of the new CBFO *Contractor Oversight Plan*. Oversight activities will include oversight of the NWP Conduct of Operations implementing procedures to ensure compliance with DOE O 422.1, *Conduct of Operations*; the NWP mentoring program to provide feedback on effectiveness; the NWP procedure development process to ensure abnormal response procedures do not depend on expert judgment or expert-based	List of oversight activities of the NWP Conduct of Operations program for inclusion in the FY16 IEP.	CBFO Assistant Manager for the Office of Operations Oversight	09/15/2015

Number	Action	Deliverable	Action Owner	Due Date
	decision making; the NWP operations drill program to ensure operator response to upset conditions are being evaluated as part of the drill program; the NWP maintenance and engineering processes to ensure out-of-service equipment is evaluated and returned to service in a timely manner.			

6.5.2 Judgment of Need: JON 34

JON 34: *NWP and CBFO need to identify and control the risk imposed by non-waste-handling equipment, e.g., combustible buildup, manual vs. automatic fire suppression system, fire- resistant hydraulic oil, etc., or treat waste-handling equipment and non-waste-handling equipment the same.*

Approach

The distinction between non-waste-handling and waste-handling equipment will be removed from the NWP program. A single NWP program will be used to evaluate all equipment. The CBFO's role is to oversee the NWP's development of the program.

Corrective Actions for JON 34

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 14 action 7 and JON 24 action 5 (2, 3, and 7).			

6.5.3 Judgment of Need: JON 35

JON 35: *NWP and CBFO management need to examine and correct the culture that exists regarding the maintenance and operation of non-waste-handling equipment.*

Approach

While both boards identified cultural issues requiring attention by CBFO, the Phase 1 Radiological Event AIB specifically identified that CBFO needs "to develop and implement an effective integrated safety management system that embraces the principals of DOE G 450.4-1C, *Integrated Safety Management* Guide…." The CBFO's current integrated safety management system is described in DOE/CBFO 09-3442, *CBFO Integrated Safety Management System Description*. This document will be reviewed against the principles of DOE G 450.4-1C, Attachment 10, and revised to incorporate those principles into the CBFO program. Once reviewed and revised, all CBFO personnel will receive training on the revised program. As an immediate action, CBFO management will conduct training on a safety conscious work environment. In addition, CBFO will commission and Institute of Nuclear Power Operations (INPO) visit, and respond as appropriate to the recommendations provided.

Corrective Actions for JON 35

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO Office of Operations Oversight Assistant Manager will review DOE/CBFO 09-3442, *CBFO Integrated Safety Management System Description*, against the principles described in DOE G 450.4-1C, Attachment 10 and revise.	CBFO Document Review Records providing proof of a comprehensive CBFO adequacy review of the DOE/CBFO 09-3442, *CBFO Integrated Safety Management System Description*, to ensure the principles of DOE G 450.4-1C, Attachment 10 are adequately flowed down. In addition, the revised version of DOE/CBFO 09-3442.	CBFO Assistant Manager for the Office of Operations Oversight	02/15/2015

Number	Action	Deliverable	Action Owner	Due Date
2	All CBFO personnel will receive training on DOE/CBFO 09-3442, *CBFO Integrated Safety Management System Description*.	Training records indicating at least 80% of the Assistant Manager for the Office of Operations Oversight's designated staff have read DOE/CBFO 09-3442 and documentation of the attendance of mandatory training on DOE/CBFO 09-3442.	CBFO Assistant Manager for the Office of Operations Oversight	02/28/2015
3	Conduct Safety Conscious Work Environment (SCWE) training for CBFO leadership to reinforce CBFO's commitment to the principles of an integrated safety management system.	Training records indicating at least 80% of the CBFO staff attendance of mandatory training on a safety conscious work environment.	CBFO Manager	12/15/2014
4	CBFO Manager will commission an Institute of Nuclear Power Operations (INPO) safety culture assist visit.,	CBFO Manager summary of CBFO actions to take in response to the INPO evaluation.	CBFO Manager	01/30/2015
5	Implement the recommendations of the evaluation as determined by the CBFO Manager.	To Be Determined based on the recommendations, validation via SC.6	CBFO Manager	Third Quarter of FY17
6	CBFO will commission a follow-up assessment of the safety culture in the third quarter of FY17 to determine the effective implementation of the WIPP safety culture.	Assessment Report of the WIPP safety culture.	CBFO Manager	Third Quarter of FY17

7 CBFO Corrective Actions to Address the Judgments of Need from the Phase 1 Radiological Report

The corrective actions are addressed in the order they were presented in the Phase 1 Radiological Report;

- Nuclear Safety (JON 10-13)
- Emergency Management (JON 15, and 20)
- Safety Culture (JON 24)
- Conduct of Operations (JON 28)
- Maintenance Program (JON 31, and 32)
- Radiation Protection Program (JON 36)
- CBFO Oversight (JON 40- 43)

7.1 Nuclear Safety Program

7.1.1 Judgment of Need: JON 10

JON 10: *CBFO needs to revise Management Procedure 4.11, Safety Basis Review Procedure, to require adequate documentation of the technical basis supporting approval of changes to the WIPP Document Safety Analysis or Technical Safety Requirements, consistent with DOE Standard 1104, e.g., regulatory compliance, justification for initial assumptions/initial conditions, reduced conservatisms of the hazards and accident analysis.*

Approach

The CBFO will revise the procedure MP 4.11, *Safety Basis Review Procedure*, to require adequate documentation and technical basis standards consistent with DOE-STD-1104-2009, *Review and Approval of Nuclear Facility Safety Basis and Safety Design Basis Documents*. The CBFO Manager will commission an independent assessment of the CBFO safety basis review and approval process to verify that the new Safety Basis review process is consistent with DOE-STD-1104-2009, *Review and Approval of Nuclear Facility Safety Basis and Safety Design Basis Documents*.

Corrective Actions for JON 10

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO Assistant Manager to the Office of Operations Oversight's designated staff will read 10 CFR 830 Subpart B, *Safety Basis Requirements*, and DOE-STD-1104-2009, *Review and Approval of Nuclear Facility Safety Basis and Safety Design Basis Documents*, to re-familiarize themselves with the requirements of the orders.	Training records indicating that at least 80% of designated personnel have read and understood 10 CFR 830 Subpart B and DOE-STD-1104-2009.	CBFO Assistant Manager for the Office of Operations Oversight	01/16/2015

Number	Action	Deliverable	Action Owner	Due Date
2	The CBFO Assistant Manager for the Office of Operations Oversight's designated staff will successfully complete DOE National Training Center courses SAF-270, *Safety Systems Oversight Duties and Responsibilities*, SAF-385, *Assessment Techniques*, and SAF-784, *Review and Approval of Nuclear Safety Basis Documents*, to obtain and demonstrate core competency for providing DOE oversight activities.	Documentation demonstrating that at least 80% of designated personnel have successfully completed SAF-270, SAF-385 and SAF-784.	CBFO Assistant Manager for the Office of Operations Oversight	05/31/2015
3	The CBFO Assistant Manager for the Office of Operations Oversight's designated staff will revise CBFO MP 4.11, *Safety Basis Review Procedure* to require adequate documentation and technical basis standards consistent with DOE-STD-1104-2009, *Review and Approval of Nuclear Facility Safety Basis and Safety Design Basis Documents*.	Revised CBFO MP 4.11.	CBFO Assistant Manager for the Office of Operations Oversight	04/30/2015
4	CBFO Assistant Manager for the Office of Operations Oversight's designated staff will be trained on the MP 4.11 revision prior to review of the revised NWP Safety Basis document.	Training records providing objective evidence that at least 80% of the CBFO Assistant Manager for the Office of Operations Oversight's designated staff have successfully completed training to the revised CBFO *Safety Basis Review Procedure*, MP 4.11.	CBFO Assistant Manager for the Office of Operations Oversight	05/15/2015
5	The Nuclear Safety Senior Technical Advisor will review the CBFO MP 4.11,	CBFO Document Review Records providing proof of a	CBFO Nuclear	04/30/2015

Number	Action	Deliverable	Action Owner	Due Date
	Safety Basis Review Procedure, to ensure the procedure requires adequate documentation and technical basis standards consistent with DOE-STD-1104, *Review and Approval of Nuclear Facility Safety Basis and Safety Design Basis Documents*.	comprehensive CBFO adequacy review of CBFO MP 4.11 to ensure it requires adequate documentation and technical basis standards consistent with DOE-STD-1104.	Safety Senior Technical Advisor	

7.1.2 Judgment of Need: JON 11

JON 11: *CBFO and DOE HQ need to commission an independent assessment of the CBFO safety basis review and approval process and implement corrective actions that ensure effective implementation.*

Approach

The CBFO Manager's Office will commission an independent assessment to verify the new Safety Basis Review Process.

Corrective Actions for JON 11

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO Manager will commission an independent assessment to verify that the new Safety Basis Review Process is effectively implemented and is consistent with DOE-STD-1104, *Review and Approval of Nuclear Facility Safety Basis and Safety Design Basis Documents*.	Report documenting the results of the independent review of the Safety Basis Review Process.	CBFO Manager	60 days after NWP submittal of Documented Safety Analysis Revision 5

7.1.3 Judgment of Need: JON 12

JON 12: *CBFO needs to perform a critical federal staffing analysis focused on Nuclear Safety e.g., Nuclear Safety Specialist, nuclear safety qualified Senior Technical Advisor and supporting CBFO Subject Matter Experts and determine whether existing resources are adequate.*

Approach

CBFO has performed a critical staffing analysis and determined that a Nuclear Safety Senior Technical Advisor position will be filled within the CBFO Office of the Manager. The new organizational structure in CBFO has a vacant position, which will be filled with an additional nuclear safety specialist reporting to the Safety Programs Division Director in the CBFO Office of Operations Oversight.

Corrective Actions for JON 12

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 24, action 1 and 2 for actions related to staffing analysis and structure.			

7.1.4 Judgment of Need: JON 13

JON 13: *CBFO and DOE HQ need to arrange for temporary DOE senior nuclear safety resources to mentor existing CBFO nuclear safety and supporting resources, and assist as necessary.*

Approach

CBFO temporarily filled the vacant Nuclear Safety Senior Technical Advisor position until a full time person can be hired.

Corrective Actions for JON 13

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO Manager's office will temporarily fill the Nuclear Safety Senior Technical Advisor position until a permanent staff member hired.	Documentation showing that a temporary staff member has been put in place until a permanent staff member can be hired.	CBFO Manager	07/31/2014

7.2 Emergency Management

7.2.1 Judgment of Need: JON 15

JON 15: *CBFO needs to take prompt action to fully integrate trained Federal management resources into the emergency response organization and take action to bring their emergency management program into compliance with DOE Order 151.1C, Comprehensive Emergency Management System.*

Approach

The CBFO Manager's Office will take compensatory actions to integrate Federal management resources into the emergency response organization and bring their emergency management program into compliance with DOE Order 151.1C.

Corrective Actions for JON 15

Number	Action	Deliverable	Action Owner	Due Date
1	Until the approval of a revised emergency management program, the CBFO Manager will direct the establishment and assignment of senior management to the Emergency Operations Center (EOC) for additional oversight.	Documentation of direction from CBFO Manager.	CBFO Manager	04/03/2014
2	See CBFO Fire Report JON 4, action 1, JON 5, action 1 and 2, and JON 7, action 1.			

7.2.2 Judgment of Need: JON 20

JON 20: *CBFO needs to ensure that NWP completes prompt action to correct longstanding deficiencies from previous reviews.*

Approach

The CBFO will develop a new procedure for responding to reviews, surveillances, and audits conducted by parties outside of the CBFO to ensure issues are tracked to completion. CBFO and EM-40 personnel will review prior assessments received between July 2008 and June 2013 to ensure issues have been address.

Corrective Actions for JON 20

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 4, actions 2-4.			

7.3 Safety Culture

7.3.1 Judgment of Need: JON 24

JON 24: *NWP and CBFO need to develop and implement an effective integrated safety management system that embraces and implements the principles of DOE G 450.4-1C, Integrated Safety Management Guide, including but not limited to:*

- *Demonstrated leadership in risk informed, conservative decision making*
- *Improved learning through error reporting and effective resolution of problems*
- *Line management encouraging a questioning attitude without fear of reprisal and following through to resolve issues identified by the workforce*
- *Reinforcing the mechanisms, e.g., WIPP Forms, "Notes to Joe," employee concern program, differing professional opinions, and protocols for communicating issues to NWP and CBFO leadership.*

Approach

While both boards identified cultural issues requiring attention by CBFO, the Phase 1 Radiological Event AIB specifically identified that CBFO needs "to develop and implement an effective integrated safety management system that embraces the principals of DOE G 450.4-1C, Integrated Safety Management Guide…." The CBFO's current integrated safety management system is described in DOE/CBFO 09-3442, CBFO Integrated Safety Management System Description. This document will be reviewed against the principals of DOE G 450.4-1C, and revised to incorporate those principles into the CBFO program. Once reviewed and revised, all CBFO personnel will receive training on the principals of the program. As an immediate action, CBFO management will conduct training on a safety conscious work environment. In addition, CBFO will commission and Institute of Nuclear Power Operations (INPO) visit, and respond as appropriate to the recommendations provided.

Corrective Actions for JON 24

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 35, actions 1-6.			

7.4 Conduct of Operations

7.4.1 Judgment of Need: JON 28

JON 28: *CBFO needs to take an active role towards improving NWP conduct of operations through implementation of a structured DOE O 226.1B, Implementation of Department of Energy Oversight Policy, oversight process that includes mechanisms for identifying, reporting, and transmitting issues that tracks corrective actions to effective closure. Specific areas of focus must include, but are not limited to:*

- *Develop and conduct routine oversight of contractor implementation of the WP 04-CO.01, Conduct of Operations series procedures. Oversight needs to include detailed oversight plans that contain specific criteria and lines of inquiry to effectively assess compliance with DOE O 422.1.*
- *Oversight of the NWP mentoring program e.g., senior supervisor watch that provides real time feedback to first and second line supervisors as to their responsibilities regarding compliant execution of operations activities in order to provide feedback on effectiveness.*
- *Oversight of procedure development in order to strengthen the structure, content and flow of abnormal response procedures to ensure immediate actions do not require judgment calls prior to execution.*
- *Overseeing execution of the NWP operational drill program that evaluates operator response to upset conditions.*
- *Strengthen oversight of NWP processes that monitor equipment status and initiate action to correct deficiencies in order to ensure a reduction in the quantity and length of time key pieces of equipment are out of service.*

Approach

The CBFO staff will review and approve the NWP Conduct of Operations matrix to ensure the matrix adequately demonstrates conformance with DOE O 422.1. In addition CBFO staff will review the procedures and plans listed in that matrix to ensure the appropriate flow-down of requirements. Finally, CBFO staff will provide input to the FY 16 Integrated Evaluation Plan to ensure compliance with DOE O 422.1.

Corrective Actions for JON 28

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 14, action 3 JON 33, actions 1-5.			

7.5 Maintenance Program

7.5.1 Judgment of Need: JON 31

JON 31: *CBFO needs to take a more proactive role in the configuration management and maintenance programs to ensure that the facility can meet its operational and life time expectancy.*

Approach

The CBFO will develop a new CBFO Contractor Oversight Plan to ensure the flow down of DOE O 226.1B, *Implementation of the Department of Energy Oversight Policy.* The Plan will address evaluations of changes to WIPP facilities, equipment, and operations and their impact on safety, and the evaluation and the timely correction of impaired or out-of-service equipment. DOE oversight staff will be trained to the requirements of DOE O 430.1B, *Life Cycle Asset Management*, and DOE O 433.1B, *Maintenance Management Program for DOE Nuclear Facilities*, in preparation for performing oversight activities associated with maintenance and configuration control activities.

Corrective Actions for JON 31

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 14, actions 1-7.			

7.5.2 Judgment of Need: JON 32

JON 32: *DOE HQ Office of Environmental Management and CBFO need to develop an infrastructure improvement plan within six months to identify and prioritize program wide critical infrastructure upgrades for key systems to ensure continuation of EM's programmatic mission execution at WIPP.*

Additionally, DOE HQ Office of Environmental Management needs to coordinate an extent of condition review at other EM sites and take action based on the outcome of that review.

Approach

CBFO has an approved Recovery Plan which addresses actions and upgrades to address resumption of operations. In addition, CBFO will develop a plan for improvements to the WIPP infrastructure to identify critical infrastructure upgrades for key systems and seek budget approval from DOE HQ for implementation.

Corrective Actions for JON 32

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO will submit a Recovery Plan to DOE HQ prior to resume TRU waste operations.	Recovery Plan	CBFO Manager	10/01/2014
2	The CBFO Assistant Manager for the Office of Program Management and the National TRU Program will develop a plan for improvements to the WIPP infrastructure. The Plan will identify and prioritize critical infrastructure upgrades for key systems to ensure continuation of the WIPP mission.	Plan for WIPP infrastructure improvements and upgrades.	CBFO Assistant Manager for the Office of Program Management and the National TRU Program	06/01/2015

7.6 Radiation Protection Program

7.6.1 Judgment of Need: JON 36

JON 36: *CBFO needs to determine the effectiveness of the radiation protection program within three months of completion of NWP's corrective actions.*

Approach

CBFO will determine the effectiveness of the radiation program following the guidance in DOE O 425.1D, *Verification of Readiness and Startup or Restart Nuclear Facilities*, and DOE-STD-3006, *Planning and Conducting Readiness Reviews*.

Corrective Actions for JON 36

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO Assistant Manager for the Office of Operations Oversight's designated staff will read 10 CFR 835, *Occupational Radiation Protection*, to re-familiarize themselves with the requirements.	Required reading documentation with signatures showing that at least 80% of the designated staff have read and understood 10 CFR 835 prior to performing oversight activities.	CBFO Assistant Manager for the Office of Operations Oversight	01/16/2015
2	The CBFO Assistant Manager for the Office of Operations Oversight's designated staff will successfully complete DOE National Training Center course: SAF-385, *Assessment Techniques*, to obtain and demonstrate core competency for performing readiness review assessment of the radiation protection.	Documentation demonstrating that at least 80% of the designated staff have successfully completed SAF-385.	CBFO Assistant Manager for the Office of Operations Oversight	05/31/2015
3	CBFO will determine the effectiveness of the NWP radiation program corrective actions within three months of completion.	Documented determination of effectiveness.	CBFO Assistant Manager for the Office of Operations Oversight	Within 3 months of completion of NWP's corrective actions

7.7 CBFO Oversight

7.7.1 Judgment of Need: JON 40

JON 40: *CBFO needs to establish and implement line management oversight programs and processes such that CBFO:*

- *Verifies that NWP has developed and implemented a DOE Order 226.1B compliant Contractor Assurance System.*
- *Meets the requirements of DOE Order 226.1B and hold personnel accountable for implementing those programs and processes.*
- *Implements effective oversight processes to ensure emphasis on conduct of operations, maintenance, radiological protection, nuclear safety, emergency management, and safety culture*

Approach

The CBFO Manager has established the Office of Operations Oversight to segregate operations, safety, engineering and environmental oversight for WIPP facility operations from programmatic production activities to enhance oversight independence. This newly established Office of Operations Oversight will develop and implement a new Contractor oversight program that fully implements the requirements of DOE O 226.1B, Implementation of the Department of Energy Oversight Policy. The new Contractor Oversight Program will ensure that processes for planning, conducting, and documenting oversight evaluations of NWP programs and activities are developed; issues are evaluated, corrected to prevent recurrence and communicated to management in a timely manner; and CBFO oversight personnel are adequately qualified and trained to perform their oversight function. The CBFO Manager, along with the Office Assistant Managers and Division Directors will hold personnel accountable for implementation of the oversight program by revising position descriptions for their staff to identify the expected oversight functions for the position.

Corrective Actions for JON 40

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report Jon 24, actions 1 - 13.			

7.7.2 Judgment of Need: JON 41

JON 41: *CBFO needs to develop and implement an effective issues management process to document, disposition (including extent of condition), close, track/trend issues, and ensure effectiveness of corrective actions. The process shall also ensure that actions from prior assessments are implemented to prevent or minimize recurrence of identified deficiencies.*

Approach

The CBFO will develop a new management procedure and user's manual for the identification, documentation, reporting and correction of issues.

Corrective Actions for JON 41

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 25, action 1.			

7.7.3 Judgment of Need: JON 42

JON 42: *The CBFO Site Manager needs to institutionalize and communicate expectations for a strong safety culture and the identification, documentation, reporting, and correction of issues without fear of reprisal.*

Approach

While both boards identified cultural issues requiring attention by CBFO, the Phase 1 Radiological Event AIB specifically identified that CBFO needs "to develop and implement an effective integrated safety management system that embraces the principals of DOE G 450.4-1C, Integrated Safety Management Guide…." The CBFO's current integrated safety management system is described in DOE/CBFO 09-3442, CBFO Integrated Safety Management System Description. This document will be reviewed against the principals of DOE G 450.4-1C, and revised to incorporate those principles into the CBFO program. Once reviewed and revised, all CBFO personnel will receive training on the principals of the program. As an immediate action, CBFO management will conduct training on a safety conscious work environment. In addition, CBFO will commission and Institute of Nuclear Power Operations (INPO) visit, and respond as appropriate to the recommendations provided.

Corrective Actions for JON 42

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 35, actions 1-6.			

7.7.4 Judgment of Need: JON 43

JON 43: *CBFO needs to evaluate the current organizational structure, identify specific staffing needs related to line management, technical discipline and oversight functions, submit those staffing needs to DOE HQ, and effectively manage their resources such that qualified personnel are effectively performing those functions.*

Approach

CBFO will evaluate its current organizational structure to identify specific staffing needs related to line management, technical discipline, current oversight functions, and overall organizational and overall organizational performance and effectiveness.

Corrective Actions for JON 43

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 24, action 1.			

8 CBFO Corrective Actions to Address the Judgments of Need from the Phase 2 Radiological Report

The corrective actions are addressed in the order they were presented in the Phase 2 Radiological Report;

- JON1
- JON 2
- JON 4
- JON 5
- JON 11
- JON 28
- JON 29
- JON 30

8.1 Carlsbad Field Office

8.1.1 Judgment of Need: JON 1

JON 1: *The National TRU Program needs to re-evaluate and strengthen the flow down of requirements regarding the compilation of Acceptable Knowledge (AK) in order to more clearly demonstrate that the WIPP Hazardous Waste Facilities Permit (HWFP), Attachment C, WIPP Waste Analysis Plan (WAP) waste characteristics prohibitions and chemical compatibility requirements are met consistent with 40 CFR 261.21.*

Approach

The National TRU Program will perform a gap analysis between 40 CFR 261.21 and the WIPP WAP, focused on characteristics prohibitions and chemical compatibility requirements with emphasis on AK compilation, and will develop an Implementation Plan based on the gap analysis report recommendations. CBFO Phase 2 Radiological Release JON 1, actions 2 and 4 investigate the consistency of the WAP with 40 CFR 261and identify implementation actions in actions 3 and 5.

Corrective Actions for JON 1

Number	Action	Deliverable	Action Owner	Due Date
1	CBFO Assistant Manager of the Office of Program Management and National TRU Program's designated staff will read 40 CFR 261 and the WIPP Hazardous Waste Facilities Permit (HWFP), Attachment C to re-familiarize themselves with the regulation and the WIPP HWFP Attachment C and, specifically, the intent of the WIPP Waste Analysis Plan to meet the 40 CFR 261.21 waste characteristics prohibitions and chemical compatibility requirements with emphasis on acceptable knowledge compilation.	Required reading documentation with signatures showing at least 80% of the CBFO Assistant Manager of the Office of Program Management and National TRU Program's designated staff have read and understand.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	07/31/2015

Number	Action	Deliverable	Action Owner	Due Date
2	Perform a gap analysis between 40 CFR 261.21 and the WIPP Waste Analysis Plan focused on characteristics prohibitions and chemical compatibility requirements with emphasis on acceptable knowledge compilation.	Gap Analysis report with recommendations.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	08/31/2015
3	Develop an Implementation Plan based on the Gap Analysis report recommendations (see corrective action 2 deliverable above).	Implementation Plan and schedule.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	10/30/2015
4	Conduct a gap analysis between the WIPP Waste Analysis Plan and 40 CFR 261 characteristic wastes.	Gap Analysis report.	Assistant Manager of the Office of Program Management and National TRU Program	09/30/2015
5	Develop an Implementation Plan based on the Gap Analysis report recommendations (see corrective action 4 deliverable).	Implementation Plan and schedule.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	10/30/2105

8.1.2 Judgment of Need: JON 2

JON 2: *The National TRU Program needs to reevaluate and strengthen the certification audit process across the DOE complex at all generator sites to include:*

- *Evaluation of waste generator repackaging operations that prepare TRU waste for characterization;*
- *Implementation of waste generator site processes as they relate to TRU waste management;*
- *Verification that changes to processes are correctly incorporated into acceptable knowledge summary reports;*
- *Verification of effective implementation documentation and programs to ensure that waste generator activities comply with the generator site Resource Conservation and Recovery Act (RCRA) permit; and*
- *Evaluation of local site office oversight of TRU waste operations.*

Approach

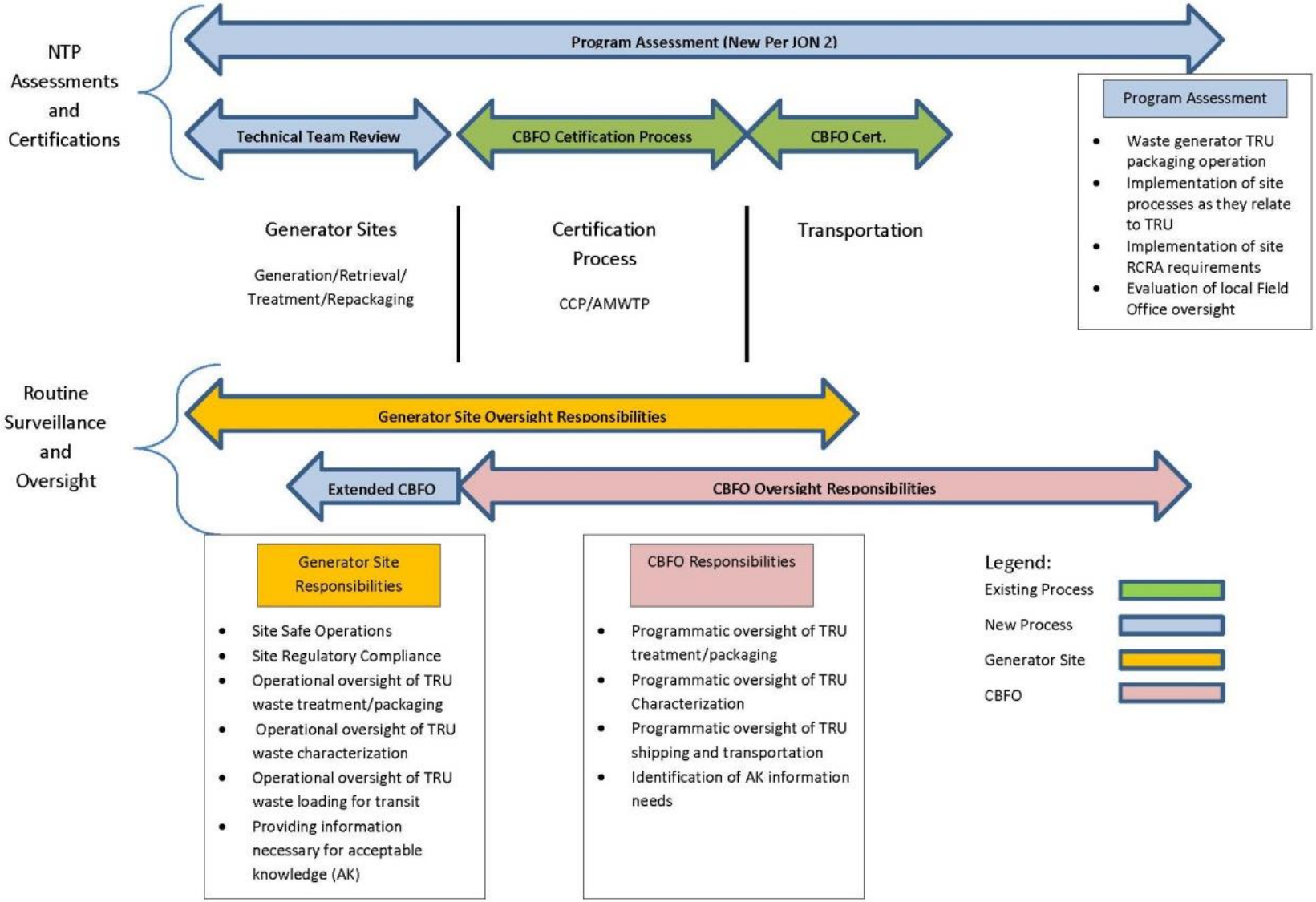
National TRU Program will benchmark the Nevada National Security Site Low-Level Waste (LLW) generator site certification and oversight program, and evaluate the portions of the program that should be adopted as a TRU waste certification and oversight program. A comprehensive TRU waste certification and oversight program will then be revised or developed based on the evaluation of the benchmarking that verifies process changes are incorporated, are in compliance with local RCRA requirements, and that evaluate local federal oversight of TRU waste operations. This comprehensive process will validate the site programs, relied on for compliant TRU waste are in place and effectively functioning. Revised National TRU Program oversight, defined in CBFO Phase 2 Radiological Release JON 5 corrective actions, will be integrated with this comprehensive review process. DOE-HQ participation with the team will be integrated with the CBFO Phase 2 Radiological Release JON 31 approach and corrective actions to perform independent oversight of the TRU waste management program. CBFO Phase 2 Radiological Release JON 2, action 4 ensures implementation of the new process defined in JON 2, action 2, by making the completion of the assessment for a waste generator site a pre-shipment condition.

CBFO Phase 2 Radiological Release JON 2 develops the program for NTP oversight of the programs and processes at the waste generator sites and ensures the local site office oversight of TRU waste operations. CBFO Phase 2 Radiological Release JON 11 provides for verification of effective implementation of programs for activities to comply with generator site RCRA permits. CBFO Phase 2 Radiological Release JON 29 specifies oversight of waste generator repackaging operations to include development and changes to procedures for TRU waste packaging operations.

Corrective Actions for JON 2

Number	Action	Deliverable	Action Owner	Due Date
1	Benchmark the NNSS LLW generator site certification and oversight program.	Evaluation report and recommendations.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	09/30/2015
2	On behalf of the National TRU Program, co-permitees will develop a comprehensive review process based on the benchmarked evaluation report, with participation from the generator sites that includes the following elements (as illustrated in the figure below: • Evaluation of waste generator repackaging operations that prepare TRU waste for characterization; • Implementation of waste generator site processes as they relate to TRU waste management; • Verification that changes to processes are correctly incorporated into acceptable knowledge summary reports; • Verification of effective implementation documentation and programs to ensure that waste	An approved and issued review process.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	11/30/2015

Number	Action	Deliverable	Action Owner	Due Date
	generator activities comply with the generator site Resource Conservation and Recovery Act permit; • Evaluation of local site office oversight of TRU waste operations; and • Evaluation of waste generator site deferred maintenance in TRU waste program operations			
3	Train CBFO Assistant Manager of the Office of Program Management and National TRU Program designated staff to the revised review process.	Training records providing objective evidence that at least 80% of the designated staff have successfully completed training to the revised process.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	12/31/2015
4	Implement the assessment program, identified in action 2, above, by developing/modifying a pre-shipment checklist to include verification NTP has completed the waste generator site assessment prior to accepting the generator site waste.	An approved pre-shipment checklist to include verification of the completion of the NTP assessment as a condition for shipment.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	11/30/2015


NTP Assessments and Certifications
Program Assessment (New Per JON 2)
Technical Team Review
CBFO Cetification Process
CBFO Cert.
Program Assessment
Waste generator TRU packaging operation
Implementation of site processes as they relate to TRU
Implementation of site RCRA requirements
Evaluation of local Field Office oversight
Generator Sites
Generation/Retrieval/ Treatment/Repackaging
Certification Process
CCP/AMWTP
Transportation
Routine Surveillance and Oversight
Generator Site Oversight Responsibilities
Extended CBFO
CBFO Oversight Responsibilities
Generator Site Responsibilities
Site Safe Operations
Site Regulatory Compliance
Operational oversight of TRU waste treatment/packaging
Operational oversight of TRU waste characterization
Operational oversight of TRU waste loading for transit
Providing information necessary for acceptable knowledge (AK)
CBFO Responsibilities
Programmatic oversight of TRU treatment/packaging
Programmatic oversight of TRU Characterization
Programmatic oversight of TRU shipping and transportation
Identification of AK information needs
Legend:
Existing Process
New Process
Generator Site
CBFO

8.1.3 Judgment of Need: JON 4

JON 4: *The CBFO oversight of characterization and certification of TRU waste sites needs to be improved to include:*

- *Waste generator repackaging operations that prepare TRU waste for characterization;*
- *Implementation of waste generator site processes as they relate to TRU waste management;*
- *Verification of effective implementation documentation and programs to ensure that waste generator activities comply with the generator site Resource Conservation and Recovery Act permit; and*
- *Evaluation of local site office oversight of TRU waste operations*

Approach

This JON was evaluated as part of CBFO Phase 2 Radiological Release Report JON 2, JON 11, and 29. CBFO Phase 2 Radiological Release JON 2 develops the program for NTP oversight of the programs and processes at the waste generator sites and ensures the local site office oversight of TRU waste operations. CBFO Phase 2 Radiological Release JON 11 provides for verification of effective implementation of programs for activities to comply with generator site RCRA permits. CBFO Phase 2 Radiological Release JON 29 specifies oversight of waste generator repackaging operations to include development and changes to procedures for TRU waste packaging operations.

Corrective Actions for JON 4

Number	Action	Deliverable	Action Owner	Due Date
	See Phase 2 Radiological Release Report JON 2, 11, 29 corrective actions.			

8.1.4 Judgment of Need: JON 5

JON 5: *CBFO needs to evaluate and restructure their organization such that objective oversight of the National TRU Program is evident and effective in ensuring that waste generator sites comply with requirements including appropriate separation of CBFO line management and oversight functions and responsibilities.*

Approach

CBFO will evaluate and make recommendations for CBFO organizational restructuring that provides objective oversight of the NTP. The implementation plan will establish resource needs and positions with an action to gain approval from EM-1. These changes will assure oversight of the National TRU Program is evident and effective in ensuring that waste generator sites comply with requirements. This oversight function will be incorporated into the review process established in CBFO Phase 2 Radiological Release Report JON 2, corrective action 2. The recommended organizational restructuring, developed in CBFO Phase 2 Radiological Release JON 5 corrective actions will be consistent and in alignment with the roles and responsibilities identified in DOE-HQ Phase 2 Radiological Release Corrective Action Plan, JON 6.

Corrective Actions for JON 5

Number	Action	Deliverable	Action Owner	Due Date
1	Consistent with the roles and responsibilities defined in DOE-HQ Phase 2 Radiological Release Corrective Action Plan, JON 6, evaluate and make recommendations for the CBFO organization restructuring to assure oversight of National TRU Program is evident and effective in ensuring that waste generator sites comply with requirements.	Evaluation report and recommendations.	CBFO Manager	08/31/2015
2	Develop and approve implementation plan and schedule based on the evaluation report and recommendations from action 1, above.	Implementation plan and schedule.	CBFO Manager	09/30/2015

8.1.5 Judgment of Need: JON 11

JON 11: *CBFO needs to conduct an extent of condition review of other waste generator sites to determine the adequacy of the flow down into the operating procedures and implementation of Resource Conservation and Recovery Act (RCRA) requirements contained in the WIPP Waste Acceptance Criteria (WAC) and hazardous waste permits regarding the treatment and repackaging of TRU waste.*

Approach

The CBFO will address this JON in a two-phased manner. The first phase will consist of the EM TRU waste generator sites conducting self-assessments to evaluate the adequacy of the flow down into the operating procedures and implementation of RCRA requirements contained in the WIPP WAC and hazardous waste permits regarding the treatment and repackaging of TRU waste. The EM TRU waste generator sites will then develop corrective action plans to address identified deficiencies, and provide the self-assessment reports and corrective action plans to CBFO and EM-30. For consistency complex wide, EM-30 will communicate expectations for self-assessments and corrective action plan content to each TRU waste generator site. The expectations will incorporate the deficiencies identified in the Phase 2 Radiological Release Report JON 3, to ensure similar deficiencies do not exist at other waste generator sites. To ensure the same action is completed by sites, not directly controlled by EM, CBFO will ensure those sites are aware of the expectation for such self-assessments, and include this (with concurrence from EM-30) as a pre-shipment requirement in the National TRU Program site certification processes. The next phase, which directly addresses the JON, is to have the National TRU Program conduct regular, periodic assessments of TRU waste generator sites to include this review of flow-down of requirements in the evaluation process. This specific action is addressed in the Phase 2 Radiological Release Report JON 2. The corrective actions for this JON also address an identified need, as expressed in the Phase 2 Radiological Release Report, for routine, periodic lessons learned communications from the National TRU Program, including waste generation and certification requirements, to all waste generator sites.

CBFO Phase 2 Radiological Release JON 11, action 7, requests that the CCP program improvements, implemented through NWP Phase 2 Radiological Release JON 7, 8, 12, are evaluated by the Advanced Mixed Waste Treatment Project (AMWTP) and

applicable AMWTP programs and procedures incorporate the improvements. CBFO Phase 2 Radiological Release JON 11, action 8 develops/modifies a pre-shipment checklist to ensure that NTP validates the completion of the evaluation specified in action 7, including verification of actions taken in response to the evaluation. CBFO Phase 2 Radiological Release JON 11, action 9 develops the process to evaluate waste previously certified, but not yet disposed, to add confidence that the waste is safe for disposal.

Corrective Actions for JON 11

Number	Action	Deliverable	Action Owner	Due Date
1	National TRU Program draft and approve a memorandum for issuance by EM-1 directing EM TRU waste generator sites to conduct self-assessment of the adequacy of the flow down into the operating procedures and implementation of Resource Conservation and Recovery Act requirements contained in the WIPP Waste Acceptance Criteria and hazardous waste permits regarding the treatment and repackaging of TRU waste. Self-Assessment criteria will incorporate JON 3 deficiencies. The direction memo will stipulate for non-EM TRU waste generator sites that this self-assessment will be a condition of shipping waste to WIPP.	Draft and approve memorandum for EM-1 signature directing self-assessments.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	08/31/2015
2	EM TRU waste generator sites to conduct self-assessment of the adequacy of the flow down into the operating procedures and implementation of Resource Conservation and Recovery Act requirements contained in the WIPP Waste Acceptance Criteria and hazardous waste permits regarding the treatment and repackaging of TRU waste.	Self-assessment reports and corrective action plans sent to NTP and EM-30.	EM TRU waste generator sites field managers	09/30/2015

Number	Action	Deliverable	Action Owner	Due Date
3	Incorporate the pre-shipment requirement for TRU waste generator site self-assessments and corrective action plans in applicable procedures and pre-shipment checklist.	An approved pre-shipment checklist to include NTP verification generator sites have completed self-assessments and generated corrective action plans as a condition for shipment.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	11/30/2015
4	Establish a mechanism for routine communications between National TRU Program and the waste generator sites for the purpose of communicating lessons learned and WIPP requirements.	Issue revised procedure or plan that includes this requirement.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	10/31/2015
5	Formalize the Difficult Waste Team process for evaluating waste streams and recommending methods for bringing waste streams into compliance with WIPP requirements, including the method for communicating recommendations from the National TRU Program to the generator sites.	Approved and implemented National TRU Program formalized process and procedures for the Difficult Waste Team responsibilities.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	11/30/2015

Number	Action	Deliverable	Action Owner	Due Date
6	Strengthen the NTP waste stream approval process to ensure the initial waste operations and subsequent changes are consistent with WIPP requirements and identified in generator site certification.	Revised and implemented NTP waste stream approval process, MP 5.2.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	11/30/2015
7	Request Advanced Mixed Waste Treatment Project (AMWTP) to evaluate their program for potential changes relative to the changes made by Centralized Characterization Program in response to the Phase 2 Radiological Report JONs 7, 8, and 12.	Letter to DOE-ID Deputy Manager for Idaho Cleanup Project requesting AMWTP conduct an evaluation and the results, including actions taken, communicated in an evaluation report.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	10/31/2015
8	Incorporate the pre-shipment requirement in applicable procedures for the Advance Mixed Waste Treatment Project to conduct the evaluation specified in action 7, above, including verification of actions taken in response to the evaluation.	An approved pre-shipment checklist to include NTP verification AMWTP has completed self-assessments and generated corrective action plans as a condition for shipment.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	10/31/2015

Number	Action	Deliverable	Action Owner	Due Date
9	Develop a process for validating currently certified waste.	Approved procedure or plan.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	12/31/2015
10	Train CBFO Assistant Manager of the Office of Program Management and National TRU Program designated staff to the approved procedure or plan for validating currently certified waste.	Training records providing objective evidence that at least 80% of the designated staff have successfully completed training to the revised process.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	01/31/2016
11	Implement the process and procedure for performing the validation of currently certified TRU waste not yet disposed of in WIPP.	Implementation schedule for the validation process on currently certified waste.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	01/31/2016

8.1.6 Judgment of Need: JON 28

JON 28: *The National TRU Program needs to clarify NA-LA and CBFO expectations and oversight roles and responsibilities between the generator site TRU waste program (LANL) and the TRU waste Centralized Characterization Program (CCP).*

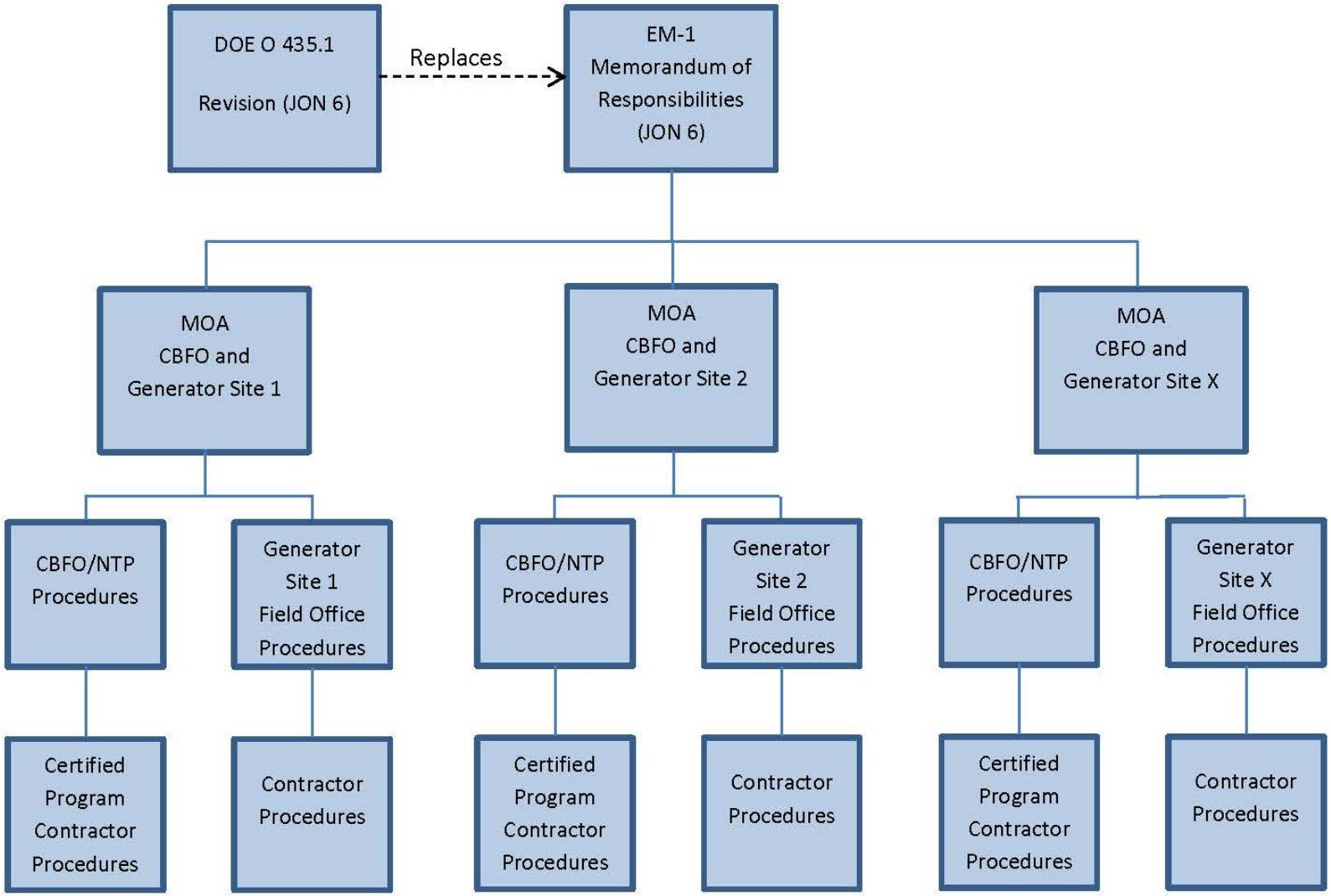
Approach

This JON was evaluated as part of the Phase 2 Radiological Release Report JON 6. NTP will develop new Memorandums of Agreement (MOAs) between the two DOE Offices for LANL and NTP defining roles, responsibilities, authorities, and accountabilities beyond the EM-1 National TRU Program delegation memo (as illustrated in the figure below). The MOA will clarify expectations and federal oversight roles and responsibilities. In addition, the National TRU Program will modify the site certification process MOAs between the National TRU Program and the generator sites (other than LANL) are approved. These new MOAs will further define roles, responsibilities, authorities and accountabilities, and goals for disposition of TRU waste from generator sites beyond the EM-1 National TRU Program delegation memo as described in the Phase 2 Radiological Release Report JON 6.

Corrective Actions for JON 28

Number	Action	Deliverable	Action Owner	Due Date
1	Develop new memorandums of agreement (MOA) between NA-LA, EM-LA and NTP to further define roles, responsibilities, authorities, and accountabilities and goals for disposition of TRU waste from LANL beyond the EM-1 National TRU Program delegation memo as described in the Phase 2 Radiological Release Report JON 6. The MOA's will clarify expectations and federal oversight roles and responsibilities, including TRU waste processing procedure revisions.	Approved MOA(s) between NTP and the following sites: • NA-LA • EM-LA	CBFO Assistant Manager of the Office of Program Management and National TRU Program	12/31/2015

Number	Action	Deliverable	Action Owner	Due Date
2	NTP will modify site certification process to include verification that new/revised memorandums of agreement between NTP and the generator site are approved and implemented as a condition of shipping waste to WIPP.	Revised and implemented CBFO/NTP procedure.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	11/30/2015
3	Review the direction provided by EM-1 in response to the Phase 2 Radiological Release Report JON 6, and revise the roles and responsibilities in the WIPP Waste Acceptance Criteria to align with that direction.	Revised WIPP WAC.	CBFO Manager	08/31/2015
4	Train CBFO Manager designated staff to the revised roles and responsibilities.	Training records providing objective evidence that at least 80% of the designated staff have successfully completed training to the revised process.	CBFO Manager	09/30/2015


DOE O 435.1
Revision (JON 6)
Replaces
EM-1
Memorandum of
Responsibilities
(JON 6)
MOA
CBFO and
Generator Site 1
MOA
CBFO and
Generator Site 2
MOA
CBFO and
Generator Site X
CBFO/NTP
Procedures
Generator
Site 1
Field Office
Procedures
CBFO/NTP
Procedures
Generator
Site 2
Field Office
Procedures
CBFO/NTP
Procedures
Generator
Site X
Field Office
Procedures
Certified
Program
Contractor
Procedures
Contractor
Procedures
Certified
Program
Contractor
Procedures
Contractor
Procedures
Certified
Program
Contractor
Procedures
Contractor
Procedures

8.1.7 Judgment of Need: JON 29

JON 29: *NA-LA and CBFO needs to perform effective Federal oversight of Centralized Characterization Program (CCP) review and approval of waste management operating procedures/process changes, e.g., WCRRF glovebox operating procedure.*

Approach

The CBFO Manager will revise and issue the CBFO Contractor Oversight Plan stating oversight expectations for mission related TRU waste management activities and environmental compliance (i.e. RCRA), and responsibilities for performing federal oversight of the certified program. This plan will include expectations for federal oversight of process changes that affect WIPP Waste Acceptance Criteria (WAC) compliance and verification of the incorporation of these changes into acceptable knowledge (AK). CBFO evaluates TRU waste generator site federal oversight as part of the CBFO Phase 2 Radiological Release JON 2, action 2, comprehensive program.

Corrective Actions for JON 29

Number	Action	Deliverable	Action Owner	Due Date
1	Revise and issue CBFO Contractor Oversight Plan stating oversight expectations for mission related TRU waste management activities and environmental compliance (i.e. RCRA), and responsibilities for performing oversight which will hold personnel accountable for implementing oversight activities. This plan will include expectations for federal oversight of waste management operating procedure/process changes that affect WIPP waste acceptance criteria compliance and incorporation of these changes into acceptable knowledge.	Approved revision of the CBFO Contractor Oversight Plan.	CBFO Assistant Manager of the Office of Operations Oversight	10/31/2015

Number	Action	Deliverable	Action Owner	Due Date
2	Train CBFO Assistant Manager of the Office of Operations Oversight designated staff to the revised CBFO Contractor Oversight Plan.	Training records providing objective evidence that at least 80% of the designated staff have successfully completed training to the revised CBFO Contractor Oversight Plan.	CBFO Assistant Manager of the Office of Operations Oversight	12/31/2015
3	Develop an implementation schedule for conducting oversight activities.	Implementation schedule for oversight activities.	CBFO Assistant Manager of the Office of Operations Oversight	12/31/2015

8.1.8 Judgment of Need: JON 30

JON 30: *DOE Headquarters and CBFO need to conduct an extent of condition review of the overall Federal oversight across the DOE complex in all three key segments of the National TRU Program: the Generator Site TRU Waste Program, TRU Waste Certification Program, and the Disposal System Program (WIPP).*

Approach

The Assistant Secretary for the Office of Environmental Management will direct EM Field Managers to conduct a self-assessment of federal oversight of their local TRU waste management and certification programs as a condition for certification to ship waste to WIPP. The EM-1 memo will stipulate that a corrective action plan be developed to address deficiencies identified during the self-assessment. NTP will ensure deficiencies identified do not invalidate TRU waste certification data. NTP will develop/modify pre-shipping checklist to verify the assessment and corrective action plan has been developed.

Corrective Actions for JON 30

Number	Action	Deliverable	Action Owner	Due Date
1	National TRU Program draft and approve a memorandum for issuance by EM-1 directing EM TRU waste generator sites to conduct self-assessment of the adequacy of federal oversight of TRU waste management and certification programs. The direction memo will stipulate for non-EM TRU waste generator sites that this self-assessment will be a condition for certification to ship waste to WIPP.	Draft and approve memorandum for EM-1 signature directing self-assessments of federal oversight.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	08/31/2015

Number	Action	Deliverable	Action Owner	Due Date
2	Incorporate the requirement for TRU waste generator sites federal oversight self-assessment and associated corrective action plan(s) in applicable procedures and pre-shipment checklist.	An approved pre-shipment checklist to include NTP verification generator sites have completed self-assessments and generated corrective action plans as a condition for shipment.	CBFO Assistant Manager of the Office of Program Management and National TRU Program	09/30/2015