

**Independent Assessment of
Conduct of Operations
at the
Idaho Cleanup Project
Radioactive Waste Management Complex**

October 2026



**U.S. DEPARTMENT
of ENERGY**

**Office of Enterprise
Assessments**

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Acronyms

AMWTF	Advanced Mixed Waste Treatment Facility
AMWTP	Advanced Mixed Waste Treatment Project
CONOPS	Conduct of Operations
CRAD	Criteria and Review Approach Document
DOE	U.S. Department of Energy
DOE-ICP	DOE Idaho Cleanup Project Field Office
EA	Office of Enterprise Assessments
eSOMS	Electronic Shift Operations Management System
FR	Facility Representative
FY	Fiscal Year
HVAC	Heating, Ventilation, and Air Conditioning
ICP	Idaho Cleanup Project
IEC	Idaho Environmental Coalition, LLC
MCP	Management Control Procedure
OFI	Opportunity for Improvement
RWMC	Radioactive Waste Management Complex
SSCs	Structures, Systems, and Components
TRUPACT-II	Transuranic Package Transporter-II
TSR	Technical Safety Requirement
WI	Work Instruction
WIPP	Waste Isolation Pilot Plant
WMF	Waste Management Facility

INDEPENDENT ASSESSMENT OF CONDUCT OF OPERATIONS AT THE IDAHO CLEANUP PROJECT RADIOACTIVE WASTE MANAGEMENT COMPLEX

Executive Summary

The U.S. Department of Energy (DOE) Office of Enterprise Assessments (EA) conducted an independent assessment of conduct of operations (CONOPS) program implementation at the Idaho Cleanup Project (ICP) Radioactive Waste Management Complex (RWMC). The assessment focused on retrieval, storage, treatment and shipping operations at the Advanced Mixed Waste Treatment Project, and included activities at the Advanced Mixed Waste Treatment Facility, Waste Management Facility warehouses, waste characterization buildings, and loading/shipping operations associated with Transuranic Package Transporter-II waste packages. Idaho Environmental Coalition, LLC (IEC) is the management and operating contractor at ICP, with the DOE ICP Field Office (DOE-ICP) having field element oversight responsibilities. The assessment was conducted in May and June 2026.

EA identified the following strengths, including one best practice:

- DOE-ICP's implementation of a holistic review of the IEC CONOPS program across all ICP facilities reduces any silo effect associated with contractor performance and provides a consistent oversight approach for tracking and trending performance. (Best Practice)
- DOE-ICP has placed added emphasis on cross-facility qualifications for current Facility Representatives to provide additional flexibility to support oversight activities, particularly in the event of attrition vacancies not anticipated by staffing analyses.
- During observed IEC shift turnovers, operations personnel demonstrated effective communication of equipment status from the outgoing shift to the incoming shift and properly recorded turnover information.
- Observed operator activities in the IEC control room demonstrated professional and disciplined operations at the controls.

EA also identified several areas of concern, including one finding, as summarized below:

- An IEC utility operator did not finish their assigned daily rounds, and the shift supervisor incorrectly signed the round sheet as being satisfactorily completed in its entirety. (Finding)
- Several instances were observed where IEC personnel did not obtain required permissions to enter control and at-the-controls areas.
- IEC has not ensured that all at-the-controls areas are appropriately posted as required.
- Multiple instances of inadequate labeling of equipment and system status by IEC were observed in the RWMC facilities.
- IEC did not ensure that operations personnel accurately recorded entry times in operator logs to provide an accurate history of facility operations.
- Multiple observed field activities performed by IEC personnel revealed procedure inadequacies associated with a technical safety requirement surveillance and monthly emergency generator testing.

In summary, IEC has adequately implemented a CONOPS program at RWMC such that performance of operations related to the control of nuclear safety hazards is effective. In addition, the oversight provided by DOE-ICP adequately supports effective performance of the IEC CONOPS program. However, EA identified several instances where program elements were inadequately implemented. Until the concerns identified in this report are addressed or effective mitigations are put in place, elevated operational and safety risk associated with waste retrieval, treatment, and shipping within RWMC remains.

INDEPENDENT ASSESSMENT OF CONDUCT OF OPERATIONS AT THE IDAHO CLEANUP PROJECT RADIOACTIVE WASTE MANAGEMENT COMPLEX

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) Office of Nuclear Safety and Environmental Assessments, within the independent Office of Enterprise Assessments (EA), conducted an assessment of conduct of operations (CONOPS) program implementation at the Idaho Cleanup Project (ICP) Radioactive Waste Management Complex (RWMC). Idaho Environmental Coalition, LLC (IEC) is the management and operating contractor at ICP, with the DOE ICP Field Office (DOE-ICP) having field element oversight responsibilities. The assessment also evaluated the effectiveness of DOE-ICP oversight of IEC's activities with respect to the CONOPS program. The assessment was conducted in May and June 2026 in accordance with the *Plan for the Independent Assessment of Conduct of Operations at the Idaho Cleanup Project Radioactive Waste Management Complex, June 2026*.

The assessment focused on retrieval, storage, treatment, and transportation operations at the RWMC associated with the Advanced Mixed Waste Treatment Project (AMWTP). The RWMC manages, stores, and disposes of waste contaminated with radioactive and hazardous elements generated in national defense and research programs. The RWMC comprises 177 acres and includes the operations and administration area, the subsurface disposal area, and the transuranic waste storage area. The AMWTP is a 56-acre transuranic waste storage area in the southern section of the RWMC where waste is stored in drums, boxes, and containers until it is prepared for shipment to the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico. AMWTP facilities involved in the retrieval, storage, treatment, and transportation of waste are classified as hazard category 2 nuclear facilities. AMWTP facilities include the Advanced Mixed Waste Treatment Facility (AMWTF), Waste Management Facility (WMF) storage locations/warehouses, WMF characterization buildings, and WMF buildings used for loading and shipping transuranic package transporter-II (TRUPACT-II) waste packages.

2.0 METHODOLOGY

The DOE independent oversight program is described in and governed by DOE Order 227.1A, *Independent Oversight Program*, which EA implements through a comprehensive set of internal protocols, operating practices, assessment guides, and process guides.¹ This report uses the terms “best practices, deficiencies, findings, and opportunities for improvement (OFIs)” as defined in the order.

As identified in the assessment plan, the criteria used to guide this assessment were based on EA CRAD 31-39, Revision 0, *Review of Conduct of Operations*. In addition, elements of EA CRAD 30-07, Revision 1, *Federal Line Management Oversight*, were used to collect and analyze data on DOE-ICP oversight activities. To gather relevant assessment data, EA reviewed IEC and DOE-ICP policies, processes, procedures, and records supporting the implementation of the CONOPS program at AMWTP facilities at the RWMC. EA also interviewed key contractor and Federal personnel responsible for developing, implementing, and overseeing the CONOPS program, and walked down significant portions of AMWTP facilities, focusing on the implementation of CONOPS practices. The members of the assessment team, the Quality Review Board, and the management responsible for this assessment are listed in appendix A.

There were no previous EA findings to follow up on during this assessment.

¹ This assessment was planned and performed to the requirements of then-current DOE Order 227.1A.

3.0 RESULTS

3.1 Organization and Administration

This portion of the assessment evaluated whether IEC has adequately implemented policies and procedures to ensure an effective operations organization.

IEC has established and implemented an adequate CONOPS program in accordance with DOE Order 422.1, *Conduct of Operations*. The program description document (PDD)-1004, *Integrated Safety Management System*, and management control procedure (MCP)-2973, *Organization and Administration*, adequately implement DOE Order 422.1, attachment 2, requirement 2.a. IEC has appropriately established shift staffing for reviewed operator, engineering, and support positions. The reviewed positions were fully staffed during observations, including relief positions. The staffing meets the minimum staffing requirements for AMWTP treatment operations and packaging and shipping operations specified in LST-1140, *RWMC-AMWTP Minimum Staffing Policy*, including operations technicians, supervisors, and radiation safety personnel.

Four interviewed control room operators demonstrated a thorough understanding of their roles and responsibilities and were fully qualified for all stations. Observed control room operators demonstrated the ability to manage two unexpected conditions associated with the supercompactor and boxline operations. Operators effectively communicated with others, including the shift supervisor, to ensure that required procedural steps were performed as specified.

IEC conducts adequate monitoring and self-assessments of CONOPS in accordance with MCP-8, *Self-Assessments*. Six reviewed assessment reports developed over the last six months and an assessment plan for an upcoming assessment showed an appropriate focus on CONOPS. The reviewed assessments included at least one performed by each of the following organizations: the Project Evaluation Board; AMWTP Engineering; IEC Safety, Health, Quality, and Security; and Nuclear Facility Management.

While reviewed processes were adequate, several implementation discrepancies were identified associated with inconsistent assessment documentation, form completion, and label markings. The CONOPS and lockout/tagout subject matter expert explained that such discrepancies were commonly due to personnel using outdated practices from their former organizations under previous contracts. (See OFI-IEC-1.)

Organization and Administration Conclusions

IEC has established and implemented an adequate CONOPS program. Interviewed personnel demonstrated a thorough understanding of their roles and responsibilities. Observed shift staffing levels were adequate, including relief personnel.

3.2 Shift Routines and Operating Practices

This portion of the assessment evaluated IEC's established shift routines and operating practices.

In general, IEC has established and implemented adequate shift routines and operating practices to ensure that shift operators are alert and informed of facility conditions as required by DOE Order 422.1, attachment 2, requirement 2.b. MCP-2974, *Shift Routines and Operating Practices*, appropriately requires prompt notifications among control room and operating personnel of current and changed facility statuses, abnormalities, or difficulties encountered in performing assigned tasks. Interviewed operators

were aware of their responsibility to promptly investigate and correct abnormal conditions, malfunctioning instruments, and adverse trends. Use of potentially distracting written materials and devices is appropriately restricted in operating areas; all observed operators appropriately adhered to these restrictions.

Observed pre-job briefings and work performance demonstrated operators' understanding of current facility conditions and required adherence to established safety requirements, with one exception. In most cases, observed operators maintained the status of equipment through inspections, checks, and tours of equipment and work areas in accordance with MCP-2974, section 4.3. Two of three observed operators performing utility rounds demonstrated clear understanding of equipment being checked, diligently checked equipment identification tags during rounds, verified equipment status, and actively looked for anomalous conditions. Most completed round sheets (data sheets that identify important equipment and acceptable equipment instrumentation readings) demonstrated that facility equipment status is being appropriately monitored and changes to equipment status are communicated. However, during an observed utility operator shift round, the operator did not complete all required rounds in accordance with MCP-2974, section 4.3; did not verify equipment identification tags; and did not fully fill out the round sheet in accordance with MCP-2974, section 4.4. Further, the utility operator and the shift supervisor signed the round sheet as properly completed despite an incomplete tour and incomplete documentation of equipment status (i.e., blank fields on the round sheet). Consequently, contrary to DOE Order 422.1, attachment 2, requirement 2.b, and MCP-2974, sections 4.3 and 4.4, IEC did not ensure that all required shift rounds were completed and appropriately signed by the shift supervisor as having been completed. (See **Finding F-IEC-1.**) Not completing required rounds and inadequately verifying rounds completion by the supervisor could delay the identification and correction of improperly operating equipment.

Shift Routines and Operating Practices Conclusions

IEC has established and implemented generally adequate shift routines and operating practices. Observed pre-job briefings, work performance, operator rounds, inspection logs, and round sheets demonstrated generally adequate communication of equipment status and proper equipment operations. However, for one observed shift, operator rounds were not completed as required, not properly documented, and inadequately reviewed.

3.3 Control Area Activities

This portion of the assessment evaluated the effectiveness of operations practices to promote orderly, business-like control area operations.

IEC has established and implemented operations practices in MCP-2975, *Control Area Activities*, that promote orderly, business-like control area operations, as required by DOE Order 422.1, attachment 2, requirement 2.c, in most control areas. Control room operators demonstrated adequate surveillance of control panels, monitored key facility performance parameters (e.g., ram pressure and puck thickness during supercompactor operations), and communicated their ability to respond to abnormalities and out-of-specification conditions. Control room operator duty assignments are adequately structured to minimize ancillary duties, such as work authorizations, procedure reviews, and maintenance support, thereby maintaining focus on facility operations.

Observed control room and operator activities demonstrated professional, disciplined operations at the controls in accordance with MCP-2975. Observed supercompactor operations were well controlled from the main control room, with operators demonstrating exceptional system and operating knowledge and appropriately engaging operations management and other subject matter experts when questions arose on waste characterization.

While the definitions of “control area” and “at-the-controls area” in MCP-2975 differ from those provided in DOE Order 422.1, the MCP-2975 definitions are appropriate for the observed facilities. The MCP-2975 definition of control area is appropriately expanded to provide consideration of potential adverse effects on equipment, processes, and worker safety in determining whether an area should be controlled as a control area. Similarly, at-the-controls areas are defined to include any areas where an operator is stationed and where that operator’s actions may be impeded or distracted by the presence of other personnel.

MCP-2975 adequately addresses control area access and authorizations to operate control area equipment. Facility walkdowns confirmed generally effective control area access with clearly identified boundaries in most areas. However, the following examples were observed where control area and at-the-controls area postings were not consistent or were not always followed:

- Contrary to DOE Order 422.1, attachment 2, requirement 2.c.(1), and MCP-2975, step 4.1 and appendix A, two instances were observed where personnel did not obtain required permissions to enter control and at-the-controls areas. (See **Deficiency D-IEC-1.**) Not obtaining appropriate permissions to access areas could result in operator distraction or unintended operation of equipment. Specifically:
 - In accordance with MCP-2975, most at-the-controls area postings include the requirement, “If this watchstation is unmanned, contact the SS [shift supervisor] for permission to enter.” During tours and various observed activities during this assessment, observed personnel did not consistently adhere to requirements to request permission to enter unmanned at-the-controls areas.
 - During observed operations at the South Boxline control room with operators at the controls, three different individuals entered the at-the-controls area without asking permission from the on-duty operator, as required by MCP-2975 and area postings.
- Contrary to DOE Order 422.1, paragraph 8.a, and attachment 2, requirement 2.c.(1), and MCP-2975, step 4.1.2, two areas that met the MCP-2975 or DOE Order 422.1 definition of at-the-controls areas were not appropriately posted as required. (See **Deficiency D-IEC-2.**) Not properly posting at-the-controls areas could result in personnel inappropriately accessing the area and interfering with the operation of equipment. Specifically:
 - Operations personnel stated that all of the control capabilities for supercompactor operations that are available in the control room were also available at the local supercompactor control station adjacent to the process line; this local control station was not posted as an at-the-controls area.
 - Panel TRU-CGLF-3503 contains the controls used to operate the adjustable center of gravity lift fixture (ACGLF) during TRUPACT-II loading. The area around the panel was not marked as an at-the-controls area.
- Some at-the-controls areas that were not walled-off rooms were clearly demarcated with a rope and the required sign; others had a sign hanging on nearby equipment with no clear indication of the boundary of the area. (See **OFI-IEC-2.**) Additionally, some observed at-the-controls signs were posted such that the area could be accessed by personnel without noticing the sign.
- One at-the-controls area rope and sign marking the utility operator’s station in the main control room had been moved behind a cabinet and was not visible. This issue was immediately corrected when pointed out.

Control Area Activities Conclusions

IEC has established adequate operations practices that promote orderly, business-like control area operations. Observed activities generally confirmed implementation of these established practices in appropriately posted control areas. However, postings were not always followed in control and at-the-controls areas, and control area postings were not always properly maintained.

3.4 Control of Equipment and System Status

This portion of the assessment evaluated IEC's practices for the control of equipment and system status.

IEC has established and implemented adequate equipment control and system status processes. Initial equipment alignment is appropriately described in MCP-2978, *Control of Equipment and System Status*, which adequately addresses DOE Order 422.1, attachment 2, requirement 2.h. Authority to operate equipment is appropriately described in MCP-2974. Personnel demonstrated awareness of equipment status during observed operations. Multiple observations of the use of computer control systems demonstrated that equipment is adequately controlled through all stages of operations, and the computer control systems appropriately prompted operators to take specific actions (e.g., open valves, notify specific personnel, verify pressures). TPR-8043, *Supercompactor and Post-Compaction Operations*, appropriately supports compliance with operational limits. Notably, during observed supercompactor operations, operators maintained appropriate control of equipment, and operational limit compliance was adequately documented in facility logs.

The management of equipment deficiencies and temporary modifications is appropriately required by MCP-2974 and MCP-2978. Maintenance activities, including post-maintenance testing and return to service, are thoroughly described in MCP-2978. Observed facility status boards were maintained throughout the RWMC. Operators and shift managers were frequently observed using the facility status board to verify equipment status during operations.

While most observations demonstrated adequate operator performance in accordance with procedures, several instances of improper control of facility systems and status were observed in the RWMC facilities. Contrary to DOE Order 422.1, attachment 2, requirement 2.h.(1), which requires awareness of equipment and system status changes, equipment and system status was not always properly labeled in the RWMC facilities. (See **Deficiency D-IEC-3.**) Improper labeling of system status in the field could lead to personnel being exposed to unnecessary hazards. The following examples were observed:

- Warning signs were located behind conduits in Building WMF-635 and could not be read.
- In multiple facilities, fire doors were marked as such on only one side of the door and were not always kept closed.
- "Caution Hot Surfaces" signs were posted in Building WMF-635 for out-of-service equipment.
- Several pieces of equipment exhibited markings made with permanent marker pens. For example, an operating piece of equipment, TRU-CGLF-3503, exhibited the "3503" as being worn off, and the number was written on the control station.
- A high noise area posting exhibited illegible signatures and dates.
- Several power panels were missing the required arc flash stand-off information.
- During emergency generator monthly test operations, operators were observed using doors marked as "Emergency Exit Only" to go back and forth between the operating panel and the generator. When this issue was brought to the supervisor's attention, they agreed that the doors should be reposted as emergency exit doors but allowed to be used during some non-emergency conditions (e.g., to aid operations with the permission of facility management).

Control of Equipment and System Status Conclusions

IEC has established and implemented adequate equipment control and system status processes. Initial equipment lineups and subsequent changes are adequately documented using operating procedures and are reflected on facility status boards. However, some observed facility systems were improperly marked.

3.5 Logkeeping

This portion of the assessment evaluated IEC's logkeeping procedures and practices, which are meant to ensure thorough, accurate, and timely recording of equipment information for performance analysis and trend detection.

IEC has established and implemented MCP-2980, *Logkeeping*, to provide the minimum standards for establishing and maintaining operating logs to meet DOE Order 422.1, attachment 2, requirement 2.k. MCP-2980 appropriately requires the prompt and accurate recording of information; a specified type, scope, and format for log entries; a defined method for recording late entries and correcting erroneous entries without obscuring the original entry; periodic supervisory reviews for accuracy, adequacy, and trends; and document retention. MCP-2980 defines "key positions" required to maintain logs as those "in a facility or operation where maintenance of a log would contribute to an accurate history of operation." While the procedure does not identify these key positions by name for the RWMC, observations confirmed that on-shift operations personnel, including the shift supervisor and control room operators, maintain narrative logs in the Electronic Shift Operations Management System (eSOMS) utility, in accordance with MCP-2890, appendix A.

Reviewed eSOMS logs were generally adequate. They contained an appropriate level of detail on most entries and demonstrated the ability to correct entries without obscuring the original entry. Supervisory reviews and annotations were adequately completed. Additionally, the ability of the eSOMS utility to maintain "open items" in the logs such that they remain at the top of a position's logs for review at each shift turnover enhances operators' awareness of abnormal conditions that have yet to be resolved. However, the following issues were identified (the reviewed sample of logs included shift supervisor logs for April 2026 and all operations logs from the onsite portion of this assessment [June 8-11, 2026]):

- Contrary to DOE Order 422.1, attachment 2, appendix A, requirement 2.k.(4).a, and MCP-2980, steps 4.2 and 4.5, for several shifts during April 2026, shift supervisor log entries for two-hour fire watch completion were made at exactly the top of each hour (e.g., at 1:00:00 PM then 3:00:00 PM then 5:00:00 PM, or similar), indicating that the log entry time was entered as the time of required completion rather than accurately reflecting actual completion time. For other shifts, the specificity of the logged time indicated that the log entry time likely corresponded to the actual time the activity was completed (e.g., 6:54:35 PM, 8:56:44 PM, 11:01:08 PM). (See **Deficiency D-IEC-4** and **OFI-IEC-3**.) Not recording the actual times of log entries reduces the accuracy of the history of facility operations.
- Required shift turnover forms for several watch stations have been recreated as "canned" log entries in eSOMS, including FRM-2319, *Facility Shift Supervisor Operations Log*, for the shift supervisor position. Where the paper forms included checkboxes for a certain status (e.g., yes/no for completion of activities or operation/suspension/shutdown for status of equipment), the canned-entry version of the form has text fields. Operators add these canned entries in eSOMS at shift turnover and adjust the text to reflect current equipment and operations status, either by deleting inapplicable selections or by manually typing in data. Because these canned entries are fully editable text, the system does not force the choice of an option in the same way as the paper form. (See **OFI-IEC-4**.) For example:

- In two reviewed instances of shift supervisor turnover entries, one status field for supercompactor operations status said, “Operations performed in last 12 hours: [YNO]” (the canned-entry version of the form provides “[YES/NO]”; the intent is for the off-going shift supervisor to delete the inapplicable status). As entered, it is unclear what status was intended to be logged.
- Other fields in FRM-2319 ask “No. days since last [specific activity].” Reviewed log entries for these fields were not consistent, with the information variously filled out as the date of the last activity or the number of days since operation.

Logkeeping Conclusions

In general, IEC has established and implemented an adequate process to record thorough, accurate, and timely equipment information for performance analysis and trend detection, though likely discrepancies in time entries and examples of errors in turnover entries were identified.

3.6 Turnover and Assumption of Responsibilities

This portion of the assessment evaluated IEC’s operational shift and operator relief turnover (transfer of information) processes.

IEC has established and implemented a generally adequate process for conducting turnovers during shift changes and worker replacements. MCP-2981, *Turnover and Assumption of Responsibilities*, appropriately addresses DOE Order 422.1, attachment 2, requirement 2.1, for operations personnel to perform turnovers during shift changes and worker replacements. MCP-2981 adequately defines key positions and the process for formal turnover of operations from one shift to another and from one person to another to ensure thorough understanding of equipment status and in-progress or planned activities. MCP-2981 also appropriately includes the defined content of turnover checklists, which support comprehensive communication and documentation of current operations.

Interviewed operations personnel were familiar with MCP-2981 for turning over in-progress activities. During observed shift turnovers, operations personnel demonstrated effective communication of equipment status from the outgoing shift to the incoming shift in accordance with MCP-2981 and properly recorded turnover information. The observed shift turnovers demonstrated that sufficient time is allowed for oncoming operations personnel to review logbooks and other document updates and discuss any information contained in the turnover documentation. The reviewed operator log at the supercompactor operator station properly reflected the turnover checklist content. During four observed operator turnovers, each operator demonstrated thorough understanding of the equipment status and documentation recorded. The shift manager turnover was thorough and accurately conveyed current operations. The turnover for the utility operators was adequately performed. However, when only one of the four on-coming operators was present for the face-to-face turnover, the on-coming operator stated that they would brief the others when they arrived; during the next shift, utility operators were asked about the status of equipment and operations and demonstrated less than adequate knowledge of the status of several systems. (See **OFI-IEC-5**.)

Turnover and Assumption of Responsibilities Conclusions

IEC has established and implemented a generally adequate process to ensure the transfer of information between outgoing and oncoming shift personnel. IEC operations personnel adequately performed turnovers during shift changes and worker replacements. During observed shift turnovers, activities in progress at the time of turnover were correctly transitioned, turnover sheets were completed and signed, and appropriate turnover information was communicated.

3.7 Technical Procedures

This portion of the assessment evaluated IEC's processes for developing and maintaining technical procedures and the adequacy and implementation of selected procedures.

IEC has established and implemented generally adequate processes for developing and maintaining accurate, understandable written technical procedures. MCP-2985, *Technical Procedures*, appropriately addresses DOE Order 422.1, attachment 2, requirement 2.p. Requirements for procedure development, format, use, revision, and adherence are adequately contained in MCP-2985. MCP-2985 also appropriately establishes requirements for the designation of use level² (level 1, 2, or 3), critical steps, hold points, and human performance tools, such as placekeeping and reader-worker techniques. Requirements for procedure review and approval are adequately contained in MCP-2985.

Reviewed procedures were generally technically accurate and used clear language. The procedure for supercompactor operations (TPR-8043) was generally well written. INST-MI-1096, *Annual Surveillance for Safety Significant Assay Equipment*, a maintenance instruction, was appropriately detailed and contained clear instructions for the surveillance. DOE/WIPP-02-3184, *CH Packaging Operations Manual* (IEC's only level 1 procedure), is generally adequate for performing waste packaging activities. This procedure was developed by the WIPP contractor and issued by the DOE Carlsbad Field Office for use by sites sending waste to WIPP.

Six observed operator evolutions were adequately performed. Observed operators read each step of TPR-8043 prior to performance and marked the steps complete after the step was conducted. Operations involving DOE/WIPP-02-3184 were properly performed in accordance with the procedure. INST-MI-1096 was properly performed. Operators adequately performed three monthly emergency generator tests using level 2 maintenance procedures.

While reviewed procedures were generally adequate, the following weaknesses were identified:

- MCP-2985, section 6, requires operations that could have significant safety consequences to be performed with level 1 procedures. Contrary to this requirement, ICP performs a required technical safety requirement (TSR) surveillance using maintenance instruction INST-MI-1096. (See **Deficiency D-IEC-5.**) Because maintenance instructions have less rigorous writing standards, document controls, and approval requirements than formal technical procedures, relying on a maintenance instruction to meet a TSR surveillance requirement could result in an unmet TSR limiting condition for operation not being detected.
- Contrary to DOE Order 422.1, attachment 2, requirement 2.p.(3), several issues were observed where the emergency generator test procedures could not be performed as written. (See **Deficiency D-IEC-6.**) Performing emergency generator tests with procedures that cannot be followed could result in improper testing of the generator. Specifically:
 - Steps were written out of sequence (e.g., Step 1 "If you have to remove the radiator cap..." Step 2 "Remove the radiator cap").

² Level 1 procedures are most significant, must be in-hand and performed as written, and require the use of a placekeeping method. For level 2 procedures, which are of lower significance, steps must be performed in order, and placekeeping/sign-off is not required. Level 3 procedures are of lowest significance, and the order of step performance is not mandatory. Other types of work control documents (e.g., maintenance instructions) have varying levels of required rigor for development, approval, use, and revision.

- There were no steps to start the generators in the sections of the procedure that the operators were using to perform the test.
- The step to record generator performance data on the data sheet occurs only after the generators were stopped, even though the data is available only when the generators are running (e.g., recording oil pressure).
- DOE/WIPP-02-3184 inappropriately contains multiple sign-off bullets within the same step in several locations throughout the procedure. (See **OFI-IEC-6**.)
- TPR-8043, step 4.3.4.2.9, directs the use of the “Pause Supercompaction” function on the supercompactor when liquid is encountered; however, there are other situations where the use of the pause function was noted by operators to be beneficial. (See **OFI-IEC-7**.) For example, the operators noted that certain drum contents often caused re-expansion of the compacted drum if compaction was not paused; pausing the supercompactor based on this situational awareness allowed for significant waste volume reduction on several occasions.

Technical Procedures Conclusions

IEC has established and implemented generally adequate processes for developing and maintaining accurate, understandable written technical procedures. However, weaknesses were identified relating to procedure use level designation and the ability to perform procedures as written.

3.8 Component Labeling

This portion of the assessment evaluated IEC’s practices for clear, accurate equipment and component labeling.

IEC has established and implemented an adequate process for equipment labeling. Procedure LST-422, *ICP Conduct of Operations Conformance Matrix for Hazard Category 2 Nuclear Facilities (DOE Order 422.1)*, and MCP-2987, *Component Labeling*, adequately address DOE Order 422.1, attachment 2, requirement 2.r. Interviewed operators were aware of their roles and responsibilities regarding component labeling. Observations of accessible facility structure, system, and component (SSC) areas and reviewed facility HVAC round sheets confirmed that valves, instruments, and piping exhibited labels that were properly applied, durable, and contained the required information, enabling facility personnel to accurately identify equipment. A recently completed inspection/surveillance report appropriately examined caution tags and out-of-service tags.

MCP-2987 also addresses temporary and informal labels. MCP-2987 allows the use of temporary labels if they contain the same content as permanent labels and if personnel document the temporary label tracking in accordance with facility/project supplemental instructions until permanent labels can be attached. No temporary labels were observed during walkdowns. Interviewees explained that while temporary labels could be used, worn or damaged labels are replaced promptly, so there is seldom a need for them. MCP-2987 also appropriately prohibits informal labels, and none were observed during walkdowns. Interviewees asserted that informal labels have not been identified as an issue in the last few years. Reviewed corrective action reports did not show any issues related to informal labels or component labeling.

While neither DOE Order 422.1 nor LST-202, *Company-Level Required Assessments*, requires an assessment targeting component labeling, the Senior Nuclear Operations Manager explained that this assessment topic is being included as a required element in *The CONOPS Strategy Improvement Plan*. This plan is being developed to ensure that all elements are addressed on a three-year rotation. The first

assessment was performed to this plan in August 2025 (IAS261152, *RWMC Caution Tag, Out of Service Tag, and Operation Locks CONOPS*) and included equipment labeling as an assessment topic.

Component Labeling Conclusions

IEC has established and implemented an adequate process for equipment labeling. Observed valves, instruments, and piping exhibited appropriate labels.

3.9 Operator Aids

This portion of the assessment evaluated IEC's practices for managing and using operator aids.

IEC has established and implemented an adequate process for providing accurate, current, and approved operator aids. Procedures LST-422 and MCP-2986, *Operator Aids*, adequately address DOE Order 422.1, attachment 2, requirement 2.q, with instructions for developing and implementing accurate, current, and approved operator aids. Observed operator aids exhibited management approval and appropriately served as necessary and useful conveniences that did not alter or conflict with approved procedures or controlled documents. Additionally, observed operator aids did not obscure equipment, were administratively controlled, and were periodically reviewed for adequacy, continued utility, and correctness. Interviewed personnel were aware of the requirements for operator aids. The reviewed operator aid log was current and aligned with postings in four facilities. During a tabletop review, operators were able to verify the use of operator aids and confirmed that they were generally helpful. However, one observed operator aid in Building WMF-618 (Operator Aid 2023-006, *Compressed Gas Cylinder*) was attached to a work stand near a compressed gas cylinder with a magnet; this condition is not in accordance with MCP-2986, section 4.2.1, which states that operator aids are to be securely fastened to the wall, door, or equipment as applicable. When communicated to management, the magnet was immediately replaced by a secure zip tie.

Operator Aids Conclusions

IEC has established and implemented an adequate process for providing accurate, current, and approved operator aids.

3.10 Federal Oversight

This portion of the assessment evaluated the adequacy of DOE-ICP's oversight of IEC CONOPS program implementation for the AMWTP at the RWMC, including program oversight and oversight of field activities.

IEC's CONOPS program was last reviewed and approved in March 2025 by DOE-ICP in accordance with the DOE Order 422.1 three-year periodicity requirement. TSR-100, *ICP Standardized Technical Safety Requirements (TSR) Document*, implements a CONOPS program as a safety management program to ensure the safe operation of the facility as an administrative control (AC) in accordance with AC 5.100.6.G. DOE-ICP reviews CONOPS program performance to fulfill the oversight requirements in DOE Order 226.1B, *Implementation of Department of Energy Oversight Policy*. DOE-ICP monitors and tracks implementation of requirements associated with safety basis compliance, work planning and control, and continued operability of safety significant SSCs. Oversight is performed through several work instructions (WIs) developed by DOE-ICP to meet DOE Order 226.1B requirements.

DOE-ICP uses 03.WI.04.01, *Oversight Planning and Scheduling*; 03.WI.04.02, *Conduct of Oversight Activities*; and 03.WI.04.05, *Risk Determination*, for oversight planning and implementation. These WIs

use factors including regulatory requirements, site hazards, degree of risk, past performance, future work activity, and direction from DOE Headquarters to determine the frequency and scope of oversight activities. CONOPS assessments performed by DOE-ICP in fiscal year (FY) 2025 included component labeling, equipment and system status, independent verification, and notifications. Additionally, DOE-ICP prepares quarterly reports of ICP contractor assurance and operational awareness activities to monitor performance, a practice that helps inform oversight activity selections. Reviewed quarterly reports for FY 2025 quarter 3, FY 2025 quarter 4, FY 2026 quarter 1, and FY 2026 quarter 2 met the requirements of the WIs and DOE Order 226.1B.

DOE-ICP has implemented a holistic review of the IEC CONOPS program across all ICP facilities. For example, all DOE-ICP Facility Representatives (FRs) (RWMC, Idaho Nuclear Technology and Engineering Center, Integrated Waste Treatment Unit, and Naval Reactors Facility) receive the same CONOPS requirement assignments, and each FR reviews them in parallel at each assigned facility. Notably, this approach is considered a **Best Practice** because it minimizes redundant work between FRs at different facilities, reduces any silo effect associated with contractor performance, and provides a consistent oversight approach for tracking and trending performance.

The most recent staffing analyses for DOE-ICP, completed for FY 2025 (dated October 30, 2024) and FY 2026 (dated October 16, 2025), were performed in accordance with DOE-STD-1063-2021, *Facility Representatives*. The FY 2026 staffing analysis shows an Office of Environmental Management (EM) DOE-ICP FR staffing level of 71% (5 of 7), with the total FR staffing percentage (across all Idaho National Laboratory facilities) of 61% (11 of 18). The FY 2026 staffing analysis also recognized that action is needed to fill current and projected vacancies when conditions allow. DOE-ICP has placed additional emphasis on cross-facility qualifications for current FRs to provide additional flexibility to support oversight activities and in the event of attrition vacancies not anticipated by the analyses. Currently, four of five FRs assigned to ICP facilities have completed their cross-qualifications, allowing for increased staff support and availability at the ICP facilities. The final FR is on track to complete their cross-qualification in the fall of 2026. All FRs assigned to ICP facilities are fully qualified for their primary assignments and have significant field experience.

Field element managers are conducting DOE Order 422.1 biennial reviews of each hazardous facility to ensure that FR staffing remains appropriate. DOE-ICP performs this review annually as part of the FR staffing analysis. The last review was conducted in October 2025.

Federal Oversight Conclusions

DOE-ICP provides adequate oversight of the CONOPS program implemented by IEC for AMWTP. DOE-ICP's implementation of a holistic review of the IEC CONOPS program across all ICP facilities is considered a best practice. Effective initiatives such as FR cross-qualification help to lower the impact of reduced resources.

4.0 BEST PRACTICES

Best practices are safety-related practices, techniques, processes, or program attributes observed during an assessment that may merit consideration by other DOE and contractor organizations for implementation. The following best practice was identified as part of this assessment:

- DOE-ICP's implementation of a holistic review of the IEC CONOPS program across all ICP facilities is considered a best practice because it minimizes redundant work between FRs at different facilities,

reduces any silo effect associated with contractor performance, and provides a consistent oversight approach for tracking and trending performance.

5.0 FINDINGS

Findings are deficiencies that warrant a high level of attention from management. If left uncorrected, findings could adversely affect the DOE mission, the environment, the safety or health of workers and the public, or national security. DOE line management and/or contractor organizations must develop and implement corrective action plans for findings. Cognizant DOE managers must use site- and program-specific issues management processes and systems developed in accordance with DOE Order 226.1B to manage the corrective actions and track them to completion.

Idaho Environmental Coalition, LLC

Finding F-IEC-1: IEC did not ensure that all required shift rounds were completed and appropriately signed by the shift supervisor as having been completed. (DOE Order 422.1, att. 2, requirement 2.b; MCP-2974, secs. 4.3 and 4.4)

6.0 DEFICIENCIES

Deficiencies are inadequacies in the implementation of an applicable requirement or standard. Deficiencies that did not meet the criteria for findings are listed below, with the expectation from DOE Order 227.1A for site managers to apply their local issues management processes for resolution.

Idaho Environmental Coalition, LLC

Deficiency D-IEC-1: IEC did not ensure that all personnel obtained required permissions prior to entering control areas and at-the-controls areas. (DOE Order 422.1, att. 2, requirement 2.c.(1), and MCP-2975, step 4.1 and app. A)

Deficiency D-IEC-2: IEC did not ensure that all areas meeting the MCP-2975 and/or DOE Order 422.1 definition of at-the-controls area are posted as required. (DOE Order 422.1, par. 8.a, and att. 2, requirement 2.c.(1), and MCP-2975, step 4.1.2)

Deficiency D-IEC-3: IEC does not ensure that equipment and system status is always properly labeled inside the RWMC facilities. (DOE Order 422.1, att. 2, requirement 2.h.(1))

Deficiency D-IEC-4: IEC did not ensure that operations personnel accurately recorded times of entries in operator logs to provide an accurate history of facility operations. (DOE Order 422.1, att. 2, app. A, requirement 2.k.(4).a, and MCP-2980, steps 4.2 and 4.5)

Deficiency D-IEC-5: IEC incorrectly uses a maintenance instruction (INST-MI-1096) rather than an appropriately controlled technical procedure to perform a TSR surveillance requirement. (MCP-2985, sec. 6)

Deficiency D-IEC-6: IEC has not ensured that the procedures for performing monthly emergency generator tests could be performed as written. (DOE Order 422.1, att. 2, requirement 2.p.(3))

7.0 OPPORTUNITIES FOR IMPROVEMENT

EA identified the OFIs shown below to assist cognizant managers in improving programs and operations. While OFIs may identify potential solutions to findings and deficiencies identified in assessment reports, they may also address other conditions observed during the assessment process. These OFIs are offered only as recommendations for line management consideration; they do not require formal resolution by management through a corrective action process and are not intended to be prescriptive or mandatory. Rather, they are suggestions that may assist site management in implementing best practices or provide potential solutions to issues identified during the assessment.

Idaho Environmental Coalition, LLC

OFI-IEC-1: Consider standardizing established processes across IEC facilities/organizations to ease the transfer and qualification of personnel.

OFI-IEC-2: Consider establishing a more standardized process for demarcating at-the-controls areas, similar to the rope-and-sign method used in the main control room, such that postings and boundaries are obvious and accidental entry cannot easily be made.

OFI-IEC-3: Consider modifying the eSOMS software such that log entries can only be time-stamped at the time the entry is made to ensure accurate reporting; consider reinforcing processes available for late entries.

OFI-IEC-4: Consider updating requirements and reinforcing expectations for the use of canned eSOMS log entries for completion of required shift turnover forms. Consider exploring ways to more accurately recreate the paper turnover forms in eSOMS.

OFI-IEC-5: Consider requiring all on-coming operators to be present at the face-to-face turnover meeting.

OFI-IEC-6: Consider proposing a revision to the waste packaging operations manual (DOE/WIPP-02-3184) to establish separate steps for each bulleted step.

OFI-IEC-7: Consider revising the supercompactor operation procedure (TPR-8043) to clarify that pausing the supercompactor can have drivers in addition to the presence of liquid, in some circumstances achieving significant volume reduction.

Appendix A Supplemental Information

Dates of Assessment

May 26 to June 17, 2026

Office of Enterprise Assessments (EA) Management

Mark D. Barth, Acting Director, Office of Enterprise Assessments

Vacant, Deputy Director, Office of Enterprise Assessments

Jack E. Winston, Acting Director, Office of Environment, Safety and Health Assessments

Tamara D. Powell, Director, Office of Nuclear Safety and Environmental Assessments

David Olah, Director, Office of Worker Safety and Health Assessments

Dr. Wade W. Gough, Acting Director, Office of Emergency Management Assessments

Brent L. Jones, Director, Office of Nuclear Engineering and Safety Basis Assessments

Quality Review Board

Vacant, Advisor

Jack E. Winston, Chair

John S. Boulden III

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