



Independent Assessment of the Training and Qualification Program at the Idaho National Laboratory Materials and Fuels Complex

September 2024

Office of Enterprise Assessments
U.S. Department of Energy

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Acronyms

| | |
|--------|------------------------------------------|
| ACA | Apparent Cause Analysis |
| BEA | Battelle Energy Alliance, LLC |
| DOE | U.S. Department of Energy |
| DOE-ID | DOE Idaho Operations Office |
| EA | Office of Enterprise Assessments |
| EDMS | Electronic Document Management System |
| HFEF | Hot Fuel Examination Facility |
| INL | Idaho National Laboratory |
| JTA | Job Task Analysis |
| MFC | Materials and Fuels Complex |
| MLP | My Learning Page |
| NFM | Nuclear Facility Manager |
| OFI | Opportunity for Improvement |
| OJT | On-the-Job Training |
| ONA | INL Office of Nuclear Assurance |
| SSCs | Structures, Systems, and Components |
| T&Q | Training and Qualification |
| TIM | Training Implementation Matrix |
| TOC | Training Oversight Committee |
| TRAIN | Training Records and Information Network |
| TSR | Technical Safety Requirement |

**INDEPENDENT ASSESSMENT OF THE
TRAINING AND QUALIFICATION PROGRAM
AT THE IDAHO NATIONAL LABORATORY MATERIALS AND FUELS COMPLEX**

Executive Summary

The U.S. Department of Energy (DOE) Office of Enterprise Assessments (EA) conducted an independent assessment of the training and qualification (T&Q) program implemented by Battelle Energy Alliance, LLC (BEA) at the Idaho National Laboratory Materials and Fuels Complex (MFC) in May and June 2024. This assessment was performed to follow up on issues identified in the MFC T&Q program as stated in the EA report *Independent Assessment of the Battelle Energy Alliance, LLC Management of Safety Issues at the Idaho National Laboratory Materials and Fuel Complex, May 2022*. The assessment also evaluated the effectiveness of the DOE-Idaho Operations Office (DOE-ID) oversight of the BEA MFC T&Q program.

EA identified the following strengths, including one best practice:

- BEA effectively implemented corrective actions and undertook other improvement initiatives that have significantly enhanced the MFC T&Q program since EA's May 2022 report.
- BEA managers at MFC have formally established and actively participate in Training Oversight Committee meetings and associated subcommittee meetings, providing an effective forum for senior managers to communicate and reinforce expectations and ensure that training is aligned with current site priorities and initiatives. (Best Practice)
- BEA maintains comprehensive, readily retrievable individual employee T&Q records for MFC, with no discrepancies identified among approximately 300 reviewed T&Q records associated with over 70 qualified/certified MFC personnel.
- All of the interviewed and observed personnel demonstrated good knowledge of the pertinent facility safety bases and criticality safety controls associated with relevant job tasks.
- BEA uses strong security protocols associated with physical and electronic examination material storage.
- DOE-ID's designated T&Q subject matter expert schedules and conducts weekly nuclear facility oversight visits and periodically provides BEA with effectively documented oversight results.

EA also identified one weakness, as summarized below:

- BEA has not developed or implemented explicit examination grading criteria at any of the hazard category 2 nuclear facilities at MFC for performance demonstrations (e.g., oral examinations).

In summary, BEA has established an effective and comprehensive T&Q program at MFC, with significant improvements observed since previous EA oversight activities in 2022. DOE-ID's oversight program is well-established and provides effective oversight of MFC T&Q activities. However, the current assessment identified a weakness related to the lack of examination grading criteria for performance demonstrations. Resolution of this weakness will enhance the effectiveness of the MFC T&Q program.

INDEPENDENT ASSESSMENT OF THE TRAINING AND QUALIFICATION PROGRAM AT THE IDAHO NATIONAL LABORATORY MATERIALS AND FUELS 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 the effectiveness of the training and qualification (T&Q) program implemented by Battelle Energy Alliance, LLC (BEA) at the Idaho National Laboratory (INL) Materials and Fuels Complex (MFC). This assessment was performed to follow up on issues identified in the MFC T&Q program as stated in the EA report *Independent Assessment of the Battelle Energy Alliance, LLC Management of Safety Issues at the Idaho National Laboratory Materials and Fuel Complex, May 2022* (hereafter referred to as the May 2022 EA report). Assessment activities were conducted in May and June 2024.

Consistent with the *Plan for the Independent Assessment of the Training and Qualification Program at the Idaho National Laboratory Materials and Fuels Complex, June 2024*, this assessment evaluated the effectiveness of BEA's MFC T&Q program. This assessment also reviewed the effectiveness of BEA's corrective actions and MFC T&Q program improvement initiatives implemented in response to issues identified during previous independent oversight activities documented in the May 2022 EA report. Additionally, this assessment evaluated the effectiveness of DOE Idaho Operations Office (DOE-ID) oversight of BEA's MFC T&Q program.

MFC serves as the foundation of nuclear research, development, and demonstration at INL. MFC includes 12 hazard category 2 and 1 hazard category 3 nuclear facilities. Capabilities provided by these facilities include proving fuels and materials, fuel fabrication and nuclear material management, transient fuel testing, post-irradiation examination and characterization, and legacy fuel disposal via separations and waste form conversion.

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. 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, this assessment considered requirements specified in the contractor requirements document (included in BEA's management and operating contract) of DOE Order 426.2 Chg 1, *Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities*, and Federal requirements specified in DOE Order 426.2A. DOE Order 426.2 Chg 1 invokes DOE-STD-1070-94 for the evaluation of contractor T&Q programs. EA used the following objectives from DOE-STD-1070-94, *Criteria for Evaluation of Nuclear Facility Training Programs*: 1 (*Management and Administration of Training and Qualification Programs*), 4 (*Determination of Training Program Content*), 5 (*Design and Development of Training Programs*), 7 (*Trainee Examinations and Evaluations*), and 8 (*Training Program Evaluation*).

EA examined key documents, such as procedures, program documents, manuals, policies, training material, and T&Q records. EA also interviewed key personnel responsible for developing and executing the associated programs; observed T&Q activities; and walked down significant portions of the Fuel

Conditioning Facility and Hot Fuel Examination Facility (HFEF), focusing on aspects related to the MFC T&Q program. The members of the assessment team, the Quality Review Board, and the management responsible for this assessment are listed in appendix A.

EA conducted a previous assessment at MFC from September 2021 to January 2022, as documented in the May 2022 EA report. The current EA assessment examined the completion and effectiveness of corrective actions for one finding described in the May 2022 EA report related to training. Results of the corrective action verification are included in section 3.5 of this report.

3.0 RESULTS

3.1 Management and Administration of Training and Qualification

This portion of the assessment evaluated BEA's training program documentation and management of T&Q records for MFC in accordance with DOE Order 426.2, attachment 1, *Contractor Requirements Document*.

Training Program Documentation

BEA's training program procedures and processes adequately implement DOE Order 426.2, attachment 1, chapters I and II. Program description document PDD-147, *MFC Nuclear and Radiological Facility Training Program*, chapter I, section 2, adequately documents responsibilities, qualifications, and authority of training organization personnel, and defines managerial roles, responsibilities, authority, and accountability in accordance with DOE Order 426.2, attachment 1, chapter I, section 2. PDD-147, chapter I, section 1, effectively fulfills the requirements for an MFC training implementation matrix (TIM) approved by DOE. The MFC TIM is adequately implemented through BEA's training program and a suite of implementing procedures in Manual 12, *Training and Qualification*. As described in PDD-147, appendix A, BEA has appropriately analyzed the workforce and listed specific MFC certified and qualified technical staff positions that have a direct impact on employee, facility, environment, or public safety through their involvement in the operations in accordance with DOE Order 426.2, attachment 1, chapter I, sections 1 and 4.b.(4)(a). LST-1478, *MFC Nuclear and Radiological Facility Training Qualifications/Certifications Requirements*, appropriately aids BEA in adhering to PDD-147 requirements by providing a comprehensive list of qualification/certification prerequisites and initial and continuing training requirements for the MFC personnel identified in PDD-147, appendix A.

Furthermore, BEA has adequately developed PDD-147 using the systematic approach to training process to fulfill requirements from DOE Order 426.2 and provide assurance that individuals associated with nuclear activities are appropriately trained and qualified to conduct work on safety structures, systems, and components (SSCs) in accordance with approved documented safety analyses. PDD-147, chapter I, section 4, and Manual 12 implementing procedures adequately implement a systematic approach to training for operations, maintenance, and technical staff personnel in accordance with DOE Order 426.2, attachment 1, chapter I, section 4.a. PDD-147 also appropriately specifies the requirement for performing periodic (at least every three years) systematic evaluations of T&Q programs. PDD-147, chapter II, adequately addresses additional, specific training requirements for positions unique to MFC in accordance with DOE Order 426.2, attachment 1, chapter II. PDD-147, chapter I, section 5.2, adequately provides requirements to ensure that subcontractor and temporary personnel who perform specialized activities (e.g., radiation protection, maintenance, in-service inspection, radiography, and welding) are qualified to perform their tasks. PDD-147, chapter I, section 10, and Manual 12 implementing procedures appropriately specify requirements for the maintenance of T&Q and certification records.

Training and Qualification Records

BEA implements an effective T&Q records management program in accordance with DOE Order 426.2, attachment 1, chapter I, section 10. The program is adequately defined by INL procedure LWP-12014, *Training Records Administration*, and is implemented effectively in the INL electronic document management system (EDMS) and training records and information network (TRAIN) learning management system. LWP-12014 provides adequate criteria to ensure that records of required MFC employee training courses and programs, including individual training records and instructional materials, are generated, identified, reviewed, approved, and maintained correctly, and documents that DOE Order 426.2 requires are satisfied.

BEA's migration from a paper-based T&Q records system to EDMS for the storage and retrieval of MFC training program documents, including lesson plans and individual personnel records, was completed satisfactorily in 2020. An observed demonstration of EDMS features and functionality showed that it is an effective and efficient tool for managing MFC's training documents electronically. The primary users of EDMS for T&Q records storage and retrieval are training managers and instructors, who were observed effectively using it to obtain current revisions of qualification cards, qualification checklists, and job task plans.

Training coordinators have used TRAIN's *Training Administration* module since 1999 to create classes and enroll people. TRAIN Web My Learning Page (MLP) is a separate tool, in use since 2021, that enables individuals to review their T&Q status – for example, to determine what web-based learning or qualifications are coming due or incomplete, and what classroom training they have scheduled. An observed demonstration of TRAIN Web MLP features and functionality showed that it has been implemented effectively for documenting, tracking, reporting, automating, and delivering MFC's training programs and materials. TRAIN Web MLP appropriately contains individual training plans, assigning job codes for each position and the associated required training for each job code. TRAIN Web MLP serves as an effective web-based platform that empowers individual workers at MFC to self-manage their training and qualifications to keep them current.

BEA maintains comprehensive, readily retrievable individual T&Q records for MFC. Approximately 300 reviewed T&Q records associated with over 70 qualified/certified personnel routinely working at MFC demonstrated appropriate qualification status. These reviewed records represented various disciplines, including technicians and maintenance personnel, certified and qualified operators, managers and supervisors, engineers and other technical support personnel, and training staff. The records included completed education and experience verification forms, checklists, exams, endorsement forms, appointment letters where applicable, and other records supporting a worker's initial qualification and the latest requalification/recertification, where applicable, in accordance with DOE Order 426.2, attachment 1, chapter I, section 10.

Management and Administration of Training and Qualification Conclusions

BEA's training program procedures and processes at MFC adequately implement DOE Order 426.2 requirements. BEA implements an effective electronic T&Q records management program and is adequately maintaining comprehensive, retrievable individual T&Q records. Since 2021, BEA has effectively deployed TRAIN Web MLP to enable MFC workers to self-manage their training and qualifications to keep them current.

3.2 Training Program Content

This portion of the assessment evaluated BEA's development of training program content using the systematic approach to training process.

BEA conducts an adequate systematic analysis of job tasks for required positions, as appropriately documented in the position job task analysis (JTA) in accordance with PDD-12005, *INL Training Program*, and TJA-12006-3, *Conduct a Job Analysis*. The detailed job analysis task listing/task-to-training matrix appropriately identifies the training type – e.g., classroom or on-the-job training (OJT) – required for each JTA task in accordance with TJA-12006-3. JTAs are appropriately kept up to date through a periodic review process conducted by facility management, operations management, and training department personnel. The reviewed JTAs for a nuclear facility manager, Analytical Research Laboratory facility operator, system engineer, health physics technician, and Neutron Radiography Reactor operator were current and appropriately captured task requirements.

JTAs were accurately flowed into the reviewed position qualification cards in accordance with PDD-147. Qualification cards for each of the positions listed above appropriately contained all necessary elements from the JTA. Pertinent requirements from the documented safety analysis and technical safety requirements (TSRs) were adequately included in each qualification card. Criticality safety controls and operating procedures necessary to operate the facility equipment were also appropriately included in the qualification cards. Operating procedure HFEF-OI-1302, *Material Handling*, strongly emphasizes and highlights TSR limiting conditions for operation, specific administrative controls, and criticality safety controls, which were appropriately present in the qualification cards. Over 20 interviewed personnel demonstrated good knowledge and understanding of the TSRs that were pertinent to their position and were equally knowledgeable of the criticality safety controls in their facilities.

Training Program Content Conclusions

JTAs are appropriately conducted to identify job tasks for required positions. Qualification card content is accurately derived from the position JTA using a systematic approach. JTAs are periodically reviewed by management and training personnel to ensure that they are up to date. The interviewed personnel demonstrated good knowledge and understanding of facility operations, pertinent TSR controls, and applicable criticality safety controls.

3.3 Design and Development of Training Programs

This portion of the assessment evaluated BEA's training program materials to ensure that training for MFC personnel appropriately provides the knowledge and skills necessary for their positions.

Learning objectives were appropriately identified for three observed training activities: alkali metal hazards, reading drawings, and fissionable material handling. Instruction on alkali metal hazards was an established classroom training class with learning objectives that were clearly communicated at the beginning of the course, with a direct link to trainee JTAs. An observed pilot course for reading drawings contained pertinent learning objectives. An OJT evolution was observed at HFEF in which the training objectives were clearly related to the trainee's ability to properly handle fissionable material. The OJT was appropriately conducted by a certified OJT evaluator, who gave instruction to the trainee, allowed the trainee to operate the equipment, and provided feedback to the trainee throughout the activity. Finally, the lesson plans associated with the three observed training activities matched the training content, supported the learning objectives, and promoted effective delivery of the training.

All of the qualified and certified personnel who were interviewed were appropriately assigned continuing training quarterly in accordance with PDD-147, section 7. Continuing training is determined through a rigorous process involving the training department, the training coordinator, and facility and operations management. The Nuclear Facility Manager (NFM) appropriately ensures that any changes in operating procedures, TSR controls, and criticality safety controls are included in each position's continuing training requirements. The NFM is appropriately required to approve all continuing training. All personnel who were observed and interviewed during this assessment (over 25) were adequately familiar with their continuing training responsibilities and were knowledgeable of how to look up their training requirements on their electronic training dashboards.

Design and Development of Training Programs Conclusions

Learning objectives were appropriately identified for three observed training activities, and the associated lesson plans were accurate, supported the learning objectives, and promoted effective delivery of the training. Continuing training is determined through a rigorous process and is appropriately required to be assigned quarterly to personnel. All interviewed and observed personnel were adequately familiar with their continuing training responsibilities.

3.4 Training Examinations and Evaluations

This portion of the assessment evaluated BEA's training examinations and evaluations administered to ensure that nuclear safety personnel have acquired and maintain knowledge and skills to effectively and safely perform their work.

PDD-147 establishes generally adequate qualification/certification processes and a suite of procedures that address DOE Order 426.2, attachment 1, chapter I, sections 5 and 6. These procedures appropriately address initial examination requirements for the qualification/certification of facility personnel, examination development, maintenance of examination question banks, and examination security.

In general, BEA adequately manages written and oral examinations. The content of written and oral examinations is appropriately changed in accordance with PDD-147, section 10, and related implementing procedures. Examination bank questions are reviewed and approved every five years in accordance with MFC-ADM-0014, *MFC Training Effectiveness Evaluation Program*. Additionally, examination bank questions are maintained and updated as needed based on approved changes to the safety basis, facility, and operating procedures. Per procedure TJA-12011-4, *Examination Items/Examination Banks*, BEA appropriately generates written examinations that are 30 percent different from previous administered examinations using a test database software program and creating multiple versions of the same examination to rearrange/reorder questions. Additionally, examination questions are appropriately derived from training learning objectives. Further, BEA adequately follows the requirements of TJA-12011-4 and uses strong security protocols associated with physical and electronic examination material storage. The observed hardcopies of examination materials were appropriately stored in locked, fireproof cabinets with tightly controlled access requirements limited to training staff, and software programs were provided to training staff with similarly strong security protocols.

Further, consistent with DOE Order 426.2, attachment 1, chapter I, sections 7 and 8, BEA has adequately established and implemented continuing training and requalification requirements for maintaining the proficiency and qualifications of nuclear facility operators and supervisors on the required biennial cycle by means of written and oral examinations. BEA adequately ensures that qualified/certified MFC personnel must successfully pass both a written and oral examination to maintain their qualification and/or certification status. For operators with lapsed qualifications or those who fail an examination,

BEA has adequately established and implemented a remedial training program in accordance with PDD-147, section 8.1.

While BEA has established generally adequate qualification/certification processes, the following weaknesses were identified:

- Contrary to DOE-STD-1070-94, criterion 7.2, and PDD-147, section 8.1, BEA has not developed or implemented explicit examination grading criteria at any of the hazard category 2 nuclear facilities at MFC for performance demonstrations (e.g., oral examinations). (See **Deficiency D-BEA-1.**) Without pre-defined grading criteria or standards associated with performance demonstrations, the likelihood of grading inconsistencies and missed opportunities to identify candidate weaknesses increases, potentially cultivating operational deficiencies without facility line management's knowledge. PDD-147, section 8.1, establishes requirements to conduct performance demonstrations in accordance with TJA-12011-3, *Conduct a Walkthrough Performance Examination*. The Purpose section of TJA-12011-3 states that specified criteria or standards are used to determine successful completion of the examination. DOE-STD-1070-94, criterion 7.2, states that "[t]he acceptance criteria used to grade examinations and performance evaluations are defined in advance of the examination or performance evaluation."

For example, an observed recertification of an HFEF fissionable material handler (FMH) (using form 361.87, *Walkthrough/Performance Demonstration Evaluation*) took approximately 45 minutes to complete, and the candidate passed with no weaknesses. The form contained a variety of discussion topics suitable for the walkthrough evaluation but lacked explicit acceptance or grading criteria. The following day, a second walkthrough/performance demonstration was held for the same FMH candidate in HFEF, but with a different lead evaluator and with the NFM in attendance as a supplemental evaluator. In contrast, the second demonstration took approximately three hours to complete, and the candidate passed with several weaknesses to reconcile.

- Procedure TJA-12011-1, *Develop and Administer Written Examinations*, lacks specific guidance regarding the use of reference material during open book examinations, contrary to DOE-HDBK-1204-97, *Guide to Good Practices for the Development of Test Items* (referenced in DOE-STD-1070-94). Consequently, one MFC open-book examination that BEA administered to maintenance technical support personnel provided reference material containing enough direct answers to the examination questions that the trainee could potentially pass the examination solely based on the reference materials, without taking the training course. (See **OFI-BEA-1.**)

Training Examinations and Evaluations Conclusions

Overall, BEA has developed and implemented an examination program for nuclear safety personnel that meets DOE Order 426.2 requirements for both initial and continuing training qualifications. BEA's suite of implementing procedures for the training program adequately addresses examination security, maintenance of examination question banks, and remedial training. The implementing procedures also ensure that examination questions are appropriately derived from training learning objectives. However, pre-defined grading criteria required by DOE-STD-1070-94 and PDD-147 Section 8.1 are not used in the administration of oral examinations.

3.5 Training Program Evaluation and Corrective Actions

This portion of the assessment evaluated BEA's response to EA's December 3, 2021, memorandum relating to a possible unacceptable immediate risk resulting from potentially unqualified personnel performing nuclear work at MFC, and to Finding F-BEA-3 in the May 2022 EA report that BEA had not adequately managed non-compliances and broad performance issues in the T&Q program that it had self-identified in 2020 in ASMT-2020-0156, *MFC DOE-STD-1070-94/DOE O 426.2 Objectives 1 – 8.*

BEA has adequately addressed the concerns detailed in EA's December 3, 2021, memorandum. In CLN220348, *Response to Office of Enterprise Assessments Memorandum Concerning Potentially Unqualified Personnel Performing Nuclear Work at the Idaho National Laboratory Materials and Fuels Complex*, dated December 14, 2021, DOE-ID disagreed with EA on the significance of the issue, but committed to resolving the training deficiencies identified in ASMT-2020-0156. BEA initiated a safety pause in December 2021 for all related work at MFC, issued LabWay condition report CO 2021-1941 to address the EA notification, and confirmed adequate T&Q of personnel before resuming work. BEA initially screened CO 2021-1941 as Category A (a highly significant high-risk condition adverse to quality), which requires a root cause analysis and corrective actions to prevent recurrence. BEA later recategorized CO 2021-1941 from Category A to Category B following initial recovery actions, which BEA considered to be appropriate because no unqualified personnel had performed work on safety SSCs or TSR surveillances. BEA appropriately conducted MFC safety SSC maintenance and engineering reviews, an extent-of-condition review for the remainder of INL, and a review of MFC TSR surveillance requirements.

Further, BEA management conducted a review of T&Q for the entire MFC workforce of 494 employees, which led to temporarily revoking qualifications or administratively restricting activities for 15 employees (3% of the workforce). These actions included 15 revoked nuclear criticality safety officer (CSO) qualifications for 6 employees (1% of the workforce) who did not meet the education and experience requirements in PDD-147 for the CSO qualification (Bachelor of Science degree); 1 revoked qualification for a Transient Reactor Test (TREAT) plant manager due to a missing unreviewed safety question evaluator qualification (reinstated upon completion of the training); and 8 Fuel Conditioning Facility employees who were administratively restricted due to expired environment, safety, and health training related to lockout/tagout, respirator use, and crane operation (although no work had been performed with the expired training). Following engagement with DOE-ID, BEA removed the MFC-specific CSO qualification from PDD-147, instead relying on the INL corporate CSO qualification. This qualification does not impose a Bachelor of Science degree requirement. BEA determined that removing this requirement is appropriate since the CSO role is largely operational in nature, while the nuclear criticality safety engineer qualification does require a Bachelor of Science degree as this position is more analytical in nature. Finally, with respect to the December 2021 EA memorandum, BEA concluded that no unqualified personnel had worked on safety SSCs or TSR surveillances.

As part of the CO 2021-1941 response, BEA appropriately completed an apparent cause analysis (ACA) in February 2022 focusing on why the MFC Training organization and MFC Corrective Action Review Board had weak initial responses to the 2020 training assessment (ASMT 2020-0156), lacked strong ownership, and did not effectively identify and resolve delays. Subsequently, BEA adequately closed out several related follow-up corrective actions from the ACA.

BEA adequately responded to Finding F-BEA-3 in the May 2022 EA report. BEA training managers effectively addressed the 44 findings identified in ASMT-2020-0156, closing all issues by mid-2022, including the actions described above. In May 2023, BEA performed a comprehensive reassessment of its T&Q program (ASMT-2023-0032), addressing all eight DOE-STD-1070-94 objectives. ASMT-2023-0032 identified an additional nine issues and concluded that MFC has made significant progress in all areas of weakness identified in the 2020 assessment, and that the corrective actions were considered effective. The reviewed closure actions associated with the seven closed issues (two remain open) demonstrate that BEA adequately described the conditions, when and where they occurred, how they were identified and by whom, and initial actions taken. BEA adequately documented any nuclear safety or safety SSC concerns, issue categories, closure dates, and corrective actions taken including objective evidence for closure.

A May 2023 INL Office of Nuclear Assurance (ONA) effectiveness review of the CO 2021-1941 closure concluded that the corrective actions taken to address the causes identified in the ACA were “marginally effective.” The scope of this effectiveness review was a comprehensive, independent review of all developed and implemented corrective actions, including associated causes and specific evidence pertaining to each corrective action. The ONA effectiveness review also reflected on 29 BEA self-identified issues related to training from November 2022 to May 2023 due to increased management engagement and observations of training. As of May 2024, BEA management had satisfactorily addressed all concerns raised by ONA in May 2023. A May 2024 ONA follow-up effectiveness review of deficiencies previously identified by ONA in May 2023 concluded that follow-on actions taken by BEA since May 2023 were effective, specifically concluding that “it was clear that past actions taken by MFC performance assurance group have resulted in a robust screening process for issues entered into the LabWay system.”

BEA’s response to the ACA appropriately resulted in the establishment of an MFC Training Oversight Committee (TOC) and associated subcommittees. Considering the inadequate initial response to the ASMT 2020-0156 findings, as described in the ACA, BEA management developed and approved CTR-55632, *MFC Training Oversight Committee Charter*, establishing the requirements for quarterly MFC TOC meetings and associated subcommittee meetings. This approach, based on Institute of Nuclear Power Operations guidelines, is considered a **Best Practice** because TOC quarterly meetings have provided an effective forum for senior managers to communicate and reinforce expectations and ensure that training is aligned with current site priorities and initiatives. The MFC TOC has become extremely valuable as it brings together leaders from across MFC and promotes open discussions between directors and managers of how the training department is functioning and supporting MFC’s overall needs and individual facility needs. The MFC TOC meetings have increased leadership engagement and oversight of overall training processes, as demonstrated by the increased number of management observations (MOPs) conducted by the MFC line management team. In 2020, managers conducted 1 training-specific MOP, whereas 66 MOPs were conducted in 2023 and 41 MOPs were conducted in the first four months of 2024.

Training Program Evaluation and Corrective Actions Conclusions

BEA’s suite of MFC training program management assessments, condition reports, ACA, corrective action assignment and closure progress since 2022 demonstrate adequate management of the issues identified in EA’s December 3, 2021, memorandum. Further, BEA adequately resolved the finding in the May 2022 EA report related to training. BEA has made significant improvements to the MFC T&Q program, including the introduction of quarterly MFC-wide TOC meetings and associated subcommittee meetings, cited as a best practice; increased leadership engagement and oversight; and an improved robust category screening process for issues entered into LabWay.

3.6 Federal Oversight

This portion of the assessment evaluated DOE-ID’s oversight processes related to BEA’s MFC T&Q program.

The DOE-ID oversight program implements DOE Policy 226.1B, *Department of Energy Oversight Policy*, through 03PD04, *DOE-ID Contractor Oversight Process Description*. DOE-ID has a designated part-time position as the nuclear facility training subject matter expert (SME), responsible for general oversight of BEA’s MFC T&Q program. Oversight of T&Q is conducted through routine operational awareness activities, shadowing, and participation on functional area assessments. The T&Q SME schedules and conducts weekly facility visits to facilitate these activities. The DOE-ID oversight program also appropriately includes training as a part of broader functional area assessments. Several reviewed

examples of DOE-ID assessments conducted over the past five years have demonstrated adherence to DOE-STD-1070-94 criteria. DOE-ID's assessment schedule appropriately includes planned annual assessments of T&Q that splits the standard's eight criteria in thirds, fulfilling the DOE Order 426.2A requirement to assess the entire scope of DOE-STD-1070-94 every three years.

DOE-ID personnel actively and effectively conduct oversight of BEA's MFC T&Q program activities. In accordance with DOE Order 426.2A, DOE-ID has reviewed and approved the most recent revisions of MFC's TIM, which comprises PDD-147 and LST-1478. The review and approval of PDD-147 also included BEA processes for individual release from T&Q program requirements based on prior education, experience, and training and/or qualification/certification equivalencies. In addition, operational awareness activity documentation demonstrated that DOE-ID performs adequate periodic/random review of individual training records; periodic observations of oral examinations, walkthroughs, and operational evaluations; and periodic spot checks of initial and continuing training classes, performance of practical factors, administration of oral examinations, and other T&Q program materials. Results of such activities are provided to BEA to improve safety and mission performance.

Federal Oversight Conclusions

DOE-ID has implemented an adequate oversight program for evaluating the effectiveness of BEA's T&Q program that meets DOE requirements. The DOE-ID oversight program appropriately includes training as a part of broader functional area assessments. DOE-ID personnel actively and effectively conduct oversight of BEA's MFC T&Q program activities and provide the results to BEA to improve safety and mission performance.

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.

- BEA managers at MFC have formally established and actively participate in TOC meetings and associated subcommittee meetings, providing an effective forum for senior managers to communicate and reinforce expectations and ensure that training is aligned with current site priorities and initiatives.

5.0 FINDINGS

No findings were identified during this assessment.

6.0 DEFICIENCIES

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

Battelle Energy Alliance, LLC

Deficiency D-BEA-1: BEA has not developed or implemented explicit examination grading criteria at any of the hazard category 2 nuclear facilities at MFC for performance demonstrations (e.g., oral examinations). (DOE-STD-1070-94, criterion 7.2, and PDD-147, sec. 8.1)

7.0 OPPORTUNITIES FOR IMPROVEMENT

EA identified the OFI 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. This OFI is offered only as a recommendation for line management consideration; it does not require formal resolution by management through a corrective action process and is not intended to be prescriptive or mandatory. Rather, it is a suggestion that may assist site management in implementing best practices or provide potential solutions to issues identified during the assessment.

Battelle Energy Alliance, LLC

OFI-BEA-1: Consider revising the written examination procedure to include specific guidance on the use of reference material during open book examinations to preclude direct answer lookups.

Appendix A Supplemental Information

Dates of Assessment

May 20 – June 17, 2024

Office of Enterprise Assessments (EA) Management

John E. Dupuy, Director, Office of Enterprise Assessments
William F. West, Deputy Director, Office of Enterprise Assessments
Kevin G. Kilp, Director, Office of Environment, Safety and Health Assessments
David A. Young, Deputy Director, Office of Environment, Safety and Health Assessments
Thomas E. Sowinski, Director, Office of Nuclear Safety and Environmental Assessments
Kimberly G. Nelson, Director, Office of Worker Safety and Health Assessments
Jack E. Winston, Director, Office of Emergency Management Assessments
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Quality Review Board

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