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ACTIVITY/PROJECT SPECIFIC PROCEDURE

SP 9-4
PERFORMING FEPs BASELINE IMPACT ASSESSMENTS FOR PLANNED OR UNPLANNED CHANGES
Revision 6

Effective Date: March 28, 2024

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1.0 Purpose and Scope

This specific procedure (SP) prescribes the Sandia National Laboratories (SNL) Waste Isolation Pilot Plant (WIPP) process for assessing the impact of changes upon the features, events, and processes (FEPs) baseline. Changes may be either planned or unplanned. "Planned changes" are those initiated by the Department of Energy (DOE) and represent a condition or description that differs from that in the most recent certification baseline. Planned changes must be approved by the Environmental Protection Agency (EPA) prior to implementation. "Unplanned changes" are those conditions or events that have not been initiated by the DOE, but differ from that described in the most recent certification baseline. Both planned and unplanned changes are evaluated to determine their impact to key PA components. Key PA components consist of:

- FEPs
- PA Scenarios
- Conceptual models
- Numerical models
- Computer Codes
- PA Parameters

Because the FEPs baseline documents what *is*, and what *is not* considered in PA, it is the logical starting point for the assessment of potential impacts from planned and unplanned changes. Based on the results of FEPs baseline impact assessments, other more detailed analyses may be conducted to determine potential impacts to the predicted performance of the WIPP in a more quantitative manner. This procedure only addresses the initial step; the FEPs baseline impact assessment. If deemed necessary, further analyses or assessments are recommended as one of the concluding steps of FEPs baseline impact assessments and must meet the requirements of NP 9-1, *Analyses*.

Acronyms and definitions for terms used in this procedure may be found in the Glossary located at the Sandia National Laboratories (SNL) WIPP Online Documents web site.

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2.0 Implementation Actions

2.1 Safety

No unusual health and safety concerns are expected as part of activities conducted under this procedure. The tasks associated with this activity are expected to be performed under a normal office environment.

2.2 Key Terms

Baseline FEPs List (BFL): The most current listing of FEPs, their descriptions, arguments, and decisions. This list is a Quality Assurance (QA) record and maintained in the Sandia National Laboratories (SNL) WIPP Records Center in Records Package 539355.

Future: A term used in defining the period of time in the future that applies to a certain FEPs, typically beginning after the closure of WIPP, and lasting until the end of the 10,000-year regulatory timeframe.

Historic, Current, and Near-Future (HCN): A term used to describe the timeframe that a given FEP is applicable. This generally implies that the FEP has happened in recorded history, is happening currently, and/or may happen in the foreseeable future.

Screening Argument: The FEP description, discussion, and relationship with the WIPP disposal system as presented in the baseline FEPs screening documents (see FEPs records package 574936).

Screening Decision: The conclusive decision that either includes, or excludes a FEP from performance assessment (PA) scenarios; Screening decisions are abbreviated as DP, UP, SO-C, SO-P, and SO-R, and are described below.

Screened in – Disturbed Performance (DP): A FEP retained and accounted for in disturbed performance scenarios.

Screened in – Undisturbed Performance (UP): A FEP retained and accounted for in undisturbed performance scenarios.

Screened Out – Consequence (SO-C): A screening decision that excludes a FEP from consideration in PA scenarios based on no, or low consequence to the disposal system. FEPs may also be SO-C due to *beneficial* consequence. That is, a FEP that has a positive or beneficial effect to the disposal system may be screened out because the difficulty of accurately representing the FEP in PA scenarios and models may be such that not accounting for the FEP is a conservative alternative to undergoing the expense and additional modeling complexity to accurately represent the FEP.

Screened Out – Probability (SO-P): A screening decision that excludes a FEP from consideration in PA scenarios based on very low probability of occurrence.

Screened Out – Regulation (SO-R): A screening decision that excludes a FEP from consideration in PA due to a regulatory directive.

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2.3 Roles and Responsibilities

FEPs Analyst: The FEPs Analyst is responsible for conducting FEPs impact assessment according to this SP, and is the primary author of the requisite reports and record submittals.

FEPs Coordinator: The FEPs Coordinator is responsible for maintenance of the Baseline FEPs List (BFL), and submission of all associated record submittals.

Performance Assessment Manager: For the purposes of this procedure, the Performance Assessment (PA) Manager is responsible for communicating any impacts identified by assessments conducted under this SP to the appropriate PA Process Model Sponsor. The PA Manager is also responsible for assuring that any further analyses recommended by impact assessments conducted under this SP are carried out and documented.

Process Model Sponsor: The Process Model Sponsor is the principal investigator (PI) responsible for the maintenance, conduct, and documentation of any of the primary PA process models. These include: Salado Flow and Transport, Culebra Flow, Culebra Transport, and Direct Release Mechanisms (spallings, cuttings, cavings, direct brine release).

2.4 Implementing Actions

2.4.1 Obtain the most recent version of the BFL from the Sandia Records Center, Records Package 539355.

2.4.2 Compare the nature and scope of the planned or unplanned change with the current BFL and identify all related FEPs.

2.4.3 Determine if there are new FEPs associated with the proposed change that are not within the current WIPP BFL. Note: Adding FEPs to the BFL must be done in accordance with NP 6-1, *Document Review Process*, and is not done under this SP. Adding FEPs to the BFL can only be done by the FEPs coordinator.

2.4.4 Determine if the screening arguments and decisions for FEPs identified in Step 2.4.2 need revision to reflect aspects of the proposed change; revise as appropriate. *Evaluation of screening arguments and descriptions must use the most current FEPs screening information as updated per AP-199, "Analysis Plan for the Reassessment of Features, Events, and Processes for the 2024 Compliance Recertification Application,"* (Kirkes 2022) *and as documented in the FEPs records package 574936.*

2.4.5 Identify additional activities based on any revised screening arguments and/or decisions. Additional activities may include but are not limited to:[1]

- New or modified screening calculations
- New or revised conceptual models
- New or revised performance scenarios
- New or revised parameterization
- New or revised process models
- New or revised modeling assumptions

[1] Analyses performed under this SP are limited to the identification of impacts to the FEPs baseline. Any subsequent action must be performed under a separate Analysis Plan.

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2.4.6 Summarize potential impacts to the FEPs baseline.

2.4.7 If the results of Step 2.4.3 conclude that revision to the BFL is necessary, revision must be done according to NP 6-1, *Document Review Process* and shall be maintained as a QA record, according to NP 17-1, *Records.*

2.4.8 Document the results and recommendations of this Baseline FEPs Assessment in an appropriate analysis report following NP 6-1 and NP 17-1 as appropriate. Report format should follow NP 9-1, Appendix A. The results of all FEPs assessments conducted under this SP should be placed in records package 574936.[2]

2.4.9 Communicate any recommended analyses or further activities to the PA Manager for assignment and disposition. This activity is validated by the mandatory signature of the PA manager on the FEPs Assessment Report cover sheet.

2.5 References

Kirkes, G.R. 2022. AP-199, Analysis Plan for the Reassessment of Features, Events, and Processes for the 2024 Compliance Recertification Application. Revision 0. December 13, 2022. Carlsbad, NM: Sandia National Laboratories.

3.0 Records

The following records, generated through implementation of this procedure, shall be prepared and submitted to the WIPP Records Center in accordance with NP 17-1 (Records):

QA Record

- FEPs Assessment Report
- Document Review and Comment Form per NP 6-1
- Revised BFL (if warranted)

4.0 Appendices

Not Applicable.

[2] Records package 574936 has been established to contain all FEPs analyses conducted since the submittal of the Compliance Recertification Application – 2019.

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