Department of Energy
Oak Ridge Operations
Office of Environmental Management
Procedure

# STARTUP AND RESTART OF OAK RIDGE RESERVATION ENVIRONMENTAL MANAGEMENT PROGRAM WORK

EM – 2.1
Revision 3

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# ACRONYMS

| | |
|---|---|
| AMEM | Assistant Manager for Environmental Management |
| CA | Corrective Action |
| CAP | Corrective Action Plan |
| COR | Contracting Officer's Representative |
| CRAD | Criteria and Review Approach Document |
| DOE | U. S. Department of Energy |
| EM | Office of Environmental Management |
| FPD | Federal Project Director |
| FRR | Field Readiness Review |
| HQ | Headquarters |
| MCR | Minimum Core Requirement |
| MSA | Management Self Assessment |
| ORO | Oak Ridge Operations Office |
| ORR | Operational Readiness Review |
| PM | Program Manager |
| POA | Plan-of-Action |
| QAD | Quality Assurance Division |
| RA | Readiness Assessment |
| SNR | Startup Notification Report |

## 1.0 PURPOSE

The purpose of this procedure is to define a process for verification of the readiness of U. S. Department of Energy, Oak Ridge Operations, Office of Environmental Management (ORO EM) program work on the Oak Ridge Reservation and surrounding areas before it is started or restarted. This procedure will specify when an Operational Readiness Review is required for startup or restart of nuclear facilities, and also provide guidance for alternative readiness verifications prior to startup or restart of other EM program work ( e.g., for non-nuclear, radiological, and other industrial facilities/activities).

Readiness Reviews are not intended to be tools of line management to achieve readiness. Readiness Reviews provide independent confirmation of readiness to start or restart operations.

## 2.0 SCOPE

This procedure describes the process that will be used by ORO EM to verify readiness. The procedure provides guidance for: (1) identification of work startups and restarts that require a DOE ORO review, (2) selection of the type of readiness verification review required, (3) review planning, (4) review implementation, (5) review reporting, and (6) corrective action (CA) follow-up.

Three types of readiness verification reviews are addressed in this procedure:
[1] Operational Readiness Reviews (ORRs);
[2] Readiness Assessments (RAs); and
[3] Field Readiness Reviews (FRRs).

The selection of the review type depends on the specific startup or restart operation and the potential hazards associated with it.

For hazard category 1, 2, and 3 nuclear facilities, EM will fully adhere to the requirements of the latest revision of DOE Order 425.1C for startup and restart of nuclear facilities during all such reviews.

Although the procedure applies to all EM program work, this does not imply that all facilities/activities will require a formal readiness verification review (i.e., ORR, RA, or FRR, prior to startup or restart). The procedure defines the framework by which facilities/activities are evaluated in the planning stage to determine if a formal review is required.

## 3.0 REFERENCES AND DEFINITIONS

### 3.1 References

3.1.1 DOE, 2003, DOE Order DOE O 425.1C, *Startup and Restart of Nuclear Facilities*, Washington, D.C.

3.1.2 DOE, 2000, DOE Standard DOE-STD-3006-2000, *Planning and Conduct of Operational Readiness Reviews* (ORR), Washington, D.C.

### 3.2 Definitions

3.2.1 Breadth: The set of core requirements evaluated by the ORR or RA team during conduct of the readiness review.

3.2.2 Corrective Actions (CAs): A measure taken to rectify and prevent recurrence of conditions that adversely affect quality and mission accomplishments.

3.2.3 Depth: The depth of review relates to the level of analysis, documentation or action by which a particular review objective is assessed. The depth to which different review objectives assessed may vary within an individual readiness review. The depth is defined in the Implementation/Review Plan prepared by the ORR or RA team.

3.2.4 Extended Shutdown: A shutdown, planned or unplanned, which because of its duration triggers either an automatic readiness review per Order 425.1C requirement or ORO requirement allowed by 425.1C.

3.2.5 Facility: Those activities, processes, or operations that involve materials in such form, quantity, or concentration that a hazard potentially exists to employees, the public, or the environment.

3.2.6 Facility Type: The type of facility is one of four types:

3.2.6.1 Nuclear facility (category 1, 2, or 3): A facility which contains enough radioactive material to warrant special controls in the operation involving this material. These are defined as:

[1] Hazard Category 1: The Hazard Analysis shows the potential for significant off-site consequences if there is an unmitigated release of radioactive materials from the facility.

[2] Hazard Category 2: The Hazard Analysis shows the potential for significant on-site consequences, see DOE Standard DOE-STD-1027-92, Table 3.1 and Table A.1.

[3] Hazard Category 3: The Hazard Analysis shows the potential for only significant localized consequences see DOE-STD-1027-92, Table 3.1 and Table A.1.

3.2.6.2 Radiological facility: This is a nuclear facility that contains less than a Hazard Category 3 amount of radioactive material.

3.2.6.3 Non-nuclear facility: Those activities, processes, or operations that may involve hazardous substances other than nuclear materials in such forms or concentration that a potential danger exists to cause illness, injury, or death to personnel within the facility site boundary or members of the public.

3.2.6.4 Other Industrial: Those activities, processes, or operations that may involve hazardous substances or industrial activities in such forms or concentration that a potential danger exists to cause illness, injury, or death to personnel within the facility site boundary.

3.2.7 Field Readiness Review (FRR): An EM review conducted by DOE Line management for non-nuclear or other industrial facilities when it is determined by the DOE line management that additional assurance of readiness beyond the contractor readiness review is desired.

3.2.8 Field Readiness Review (FRR) Plan: A structured review plan that is prepared and implemented for FRRs that identifies all of the necessary criteria and review approaches required for the determination of readiness to safely startup and operate the specified facility.

3.2.9 Implementation Plan: A structured review plan that is prepared and implemented for an ORR per DOE Order DOE O 425.1C. that identifies all of the necessary criteria and review approaches required for the determination of readiness to safely startup and operate the specified facility. This document implements the scope and direction approved in the Plan of Action (POA) and defines the depth of the review. An Implementation Plan may or may not be used for a Readiness Assessment dependent on the complexity of the review.

3.2.10 Management Self Assessment (MSA): An internal review conducted by the line organization for the purpose of confirming readiness.

3.2.11 Minimum Core Requirement (MCR): A fundamental area or topic of review evaluated during an ORR or RA to assess whether a facility can be operated safely. The core requirements are subdivided into core objectives to facilitate definition of the breadth of readiness reviews and to facilitate development of review criteria. Core requirements are prescribed in DOE Order DOE O 425.1C.

3.2.12 Nuclear Facility Hazard Category: The category of a nuclear facility determined by the quantity, type, and release potential of the nuclear material present. Nuclear facilities may be either Category 1, 2, 3, or radiological (less than category 3).

3.2.13 Operational Readiness Review (ORR): A disciplined, systematic, documented, performance-based examination of facilities, equipment, personnel, procedures, and management control systems to ensure that a facility will be operated safely within its approved safety envelope as defined by the facility safety basis. This is the highest level of readiness verification review. Typically , the ORR process entails the completion of four separate reviews: a contractor Management Self Assessment (MSA); a contractor independent ORR; a DOE MSA: and the DOE ORR.

3.2.14 Plan-of-Action (POA): The document prepared by line management in advance of an ORR/RA which describes the breadth and the prerequisites of the readiness review, defines what will be evaluated by the review, and identifies the review team leader. POAs are required only for ORR and RAs and must be submitted to the authorization authority for approval.

3.2.15 Planned Shutdown: A facility shutdown required to perform scheduled activities (such as programmatic or equipment adjustments, reactor refueling, maintenance, surveillance, tests, inspections, and/or safety upgrades) or for programmatic reasons unrelated to the facility's ability to operate, such as a funding shortfall, is a planned shutdown. Local procedures should define the review requirements for shutdowns of this type. In all cases, if a review is required, the ORR or RA process will be used.

3.2.16 Prerequisites: Specific, measurable actions or conditions identified in the POA that must be met prior to the start of the RA/ORR.

3.2.17 Program Work: Work on a facility that is accomplished to further the goals of the facility mission and/or program for which the facility is operated. Program work is not accomplished when a facility is shut down. It does not include work that would be required to maintain the facility in a safe shutdown condition, minimize radioactive material storage, or accomplish modifications and correct deficiencies required before program work can recommence.

3.2.18 Readiness Assessment (RA): A review that is conducted to verify readiness to startup or restart a nuclear facility when an ORR is not required but the contractor's standard procedures for startup/restart are not judged by contractor or DOE management to provide an adequate verification of readiness. RAs are required for certain startup/restart situations by Order 425.1C. This procedure directs, as allowed by 425.1C, the use of RAs for additional startups/restarts. The rigor of an RA is graded to the complexity and risks posed by the facility/activity being reviewed. That gradation of rigor can range from completion of a checklist to near ORR rigor. Additionally, in lieu of a DOE RA, EM may oversee the contractor RA if specified in the approved SNR.

3.2.19 Readiness-to-Proceed Letter: The formal document submitted by the contractor which certifies the conclusion that the facility is prepared to start or resume operations. This is a prerequisite for starting an ORR or RA.

3.2.20 Restart: The recommencement of program work. Restarts requiring an ORR can occur in operating facilities if the process to be resumed meets the requirements for an ORR. This can be true even if the same program work is ongoing in some other portion of the operating facility.

3.2.21 Shutdown: The condition in which a facility, operation, or activity is not operational and has ceased program work. This condition may be planned or unplanned.

3.2.22 Startup: The initial operation of a facility or process to perform program work.

3.2.23 Startup Notification Report (SNR): A quarterly report by the contractor to identify all known future EM facility starts and restarts for category 1, 2 and 3 nuclear facilities. The report identifies the facility and based on Order 425.1C criteria specifies whether an ORR or RA is required. For startups/restarts requiring an ORR or RA, the authorization authority is identified. The report is submitted to the authorization authority for approval.

3.2.24 Substantial Modifications: Changes that increase the risk already accepted by the DOE for the operation, activity, or facility and/or that have impacts on the operational complexity of the operation, activity, or facility.

3.2.25 Unplanned Shutdown: The termination of program work at a facility for any cause, such as equipment malfunction, personal error, or on-shift operator response to indications or situations that would have unsafe consequences without shutdown.

## 4.0 ROLES AND RESPONSIBILITIES

All applicable roles and responsibilities are defined in this procedure in conjunction with the specific actions that various EM and contractor staff have responsibility for implementing.

## 5.0 PROCEDURE

### 5.1 Determining the Need for a Startup or Restart Review and Type of Review Required

5.1.1 The DOE ORO EM Federal Project Director (FPD) or designee, with the support of the Integrated Project Team (IPT) and QAD staff, must work with their contractor counterparts to identify the specific startups or re-starts for Category 1, 2, or 3 nuclear facilities. This evaluation must occur early in the planning phase of a project, or operation/activity within a project, and documented in the contractor generated Startup Notification Report (SNR). Order 425.1C requires the contractor to submit SNRs at least one year ahead of the projected startup/restart date. FPDs should ensure that the contractor meets this requirement. In the event a startup or restart identification occurs within the one year window due to unforeseen circumstances; e.g., change in method of accomplishment or programmatic direction, the FPD should ensure that an SNR is produced as soon as reasonable. Order 425.1C also requires the contractor to submit their SNRs at a periodicity specified by DOE (recommended to be quarterly). EM HQ and consequently ORO EM adopted this quarterly requirement and this procedure formalizes that requirement for ORO EM and its contractors. DOE staff should use Appendix I - Review Needs Determination of this procedure and QAD staff consultations for guidance on the identification of items which require a SNR.

5.1.2 DOE Order 425.1C with DOE STD 3006-2000 as guidance identifies the required elements of the SNR and specifies requirements for proposal of the level of review and startup authorization authority for startup/restart. This procedure, as allowed by Order 425.1C, provides further requirements for establishing level of review and startup authorization authority beyond O 425.1C specified situations. These local requirements are contained in Appendix I, Table I-1 and its accompanying legends and notes. When the SNR is received, the QAD will coordinate a review of the SNR against these requirement documents to determine if a recommendation to approve the SNR can be made to the authorization authority. To facilitate this review, technical direction is to be provided to all EM contractors that SNRs should be provided to ORO EM two weeks prior to date due to authorization authority. If a recommendation to approve the SNR is to be made, the SNR will be forwarded to the authorization authority. If the authorization authority resides at ORO, this is accomplished by the Contract Officer Representative. If a HQ official is authorization authority, SNRs from all ORO EM contractors will be forwarded in a combined submittal by the Assistant Manager of Environmental Management. The SNR must be approved by the current authorization authority identified for ORO EM activities. Information copies will be provided to EM HQ organizations as specified in DOE O 425.1C.

If a recommendation to approve cannot be made, the FPD with support from QAD, shall work with the contractor to correct the deficiencies in the submittal and resubmit.

5.1.3 For Non-Nuclear Facilities, Radiological Facilities, and other Industrial Facilities, the final decision on the recommended startup or restart activities, as well as the type of review required, will be made by the FPDs with IPT and QAD support. Any review or assessment to be conducted should be entered into the EM Integrated Assessment Schedule (IAS) by Quality Assurance Division (QAD) staff.

5.1.4 The contract COR will communicate the approval of the SNR to the contractors.

## 5.2 Scheduling

5.2.1 The EM Integrated Assessment Schedule will be maintained by the QAD and will list planned startup or restart reviews and review dates. The schedule will be updated at least annually, per EM-3.3, to reflect changing conditions and made available to EM staff via hard copy or electronic transmission. The QAD will also provide review information as appropriate for inclusion in the ORO IAS.

## 5.3 Review Planning and Documentation

5.3.1 The QAD will coordinate the planning of all readiness reviews.

**If an FRR is to be conducted, skip to section 5.3.4**

5.3.2 ORRs/RAs will be planned and conducted in accordance with DOE Order 425.1C. The guidance provided in DOE Standard DOE-STD-3006-2000 will also be used during the planning stages of ORRs. Additional clarifications and instructions to these established procedures are set out below.

5.3.3 Develop the Plan of Action (POA): The FPD is responsible for ensuring the development of the POA. A checklist that lists required elements of a POA is provided in Appendix II. POAs must contain the elements shown in Appendix II. Minimum Core Requirements (MCRs) should be reviewed for their applicability, and then tailored to the specific startup or restart. The POA must be submitted to the Authorization Authority for approval, with information copies provided to EM HQ organizations as required by DOE O 425.1C and as identified by EM HQ.

5.3.3.1 For RAs, simplification of the process is strongly encouraged through the use of checklists and other streamlined review tools. However, all review approaches must be documented in the POAs and then further defined in the RA Implementation Plan (IP). However, combining the POA and IP is an option for less complex RA startups/restarts reviews. A detailed analysis of the MCRs contained in DOE Order DOE O 425.1C is not required for a RA.

5.3.3.2 Under certain circumstances, as described in DOE STD 3006-2000, a separate DOE RA is not required. This approach must be approved in the SNR. In such instances, DOE will perform structured oversight of the contractor's RA. This will include a written plan for the oversight and adequate documentation of the results. This approach is typically only used when the contractor has been granted authorization authority.

5.3.4 Develop the Implementation/Review Plan: The review Team Leader will coordinate the development of an ORR Implementation Plan or RA/FRR review plan. The IP will

be based on the approved POA (not available for FRRs). DOE STD-3006-2000 may be utilized for guidance on the content.

5.3.4.1 Review Plans for RAs and FRRs will be provided to the FPD, PM and Facility Representative for review and comment.

5.3.4.2 For ORRs, transmit the Implementation Plan to the DOE Deputy Assistant Secretary for Corporate Safety Assurance, or HQ identified equivalent and other HQ identified staff, for review and comment.

5.3.4.3 Copies of the final Implementation/Review Plan will be provided to each review team member, the responsible EM FPD, PM, and Facility Representative.

5.3.5 Readiness Criteria: Adequate establishment of the readiness criteria is most crucial since this is a core of the review and the key to safe work startup or restart.

5.3.5.1 For an ORR, these consist of the MCRs identified in the plan of action. Criteria and Review Approach Documents (CRADs) will be developed by the team members for their MCRs.

5.3.5.2 For an RA, these consist of criteria identified in the POA. Specific lines of inquiry may be developed by the review team.

5.3.5.3 For an FRR, these are established in the review plan as lines of inquiry and are developed by the review team.

5.3.6 Conduct a Management Self Assessment (MSA): The EM MSA is typically conducted following the completion of the contractor's readiness review. The MSA should be conducted by line management with support from the appropriate facility representative and subject matter experts. The approach and methodology for the conduct of the MSA will be defined in an MSA Plan. The MSA Plan should contain, at a minimum:

[a] verification that the contractor readiness process was adequate for verifying readiness with respect to the MCRs and prerequisites, and that ORO matrix support and EM line management programs are fully functional and staffed with qualified personnel;
[b] a format for documenting findings and transmitting these to the contractor for CAs;
[c] a process for verification of MSA finding closure; and
[d] a format for documenting the overall results of the MSA.

5.3.7 Initiation of DOE Readiness Review: Prior to initiation of the DOE readiness review certain actions must be completed.

5.3.7.1 Readiness to Proceed (Certificate of Readiness): The FPD must obtain a Readiness to Proceed letter from the contractor before the EM ORR/RA/FRR can be initiated. The contractor letter must state that the contractor ORR/RA/FRR has been completed and that the contractor is ready to assume operation of the facility/activity under review.

5.3.7.2 For DOE ORRs and RAs, the FPD will prepare a memorandum to the Startup Authority requesting that the ORR/RA be started; the review team lead must be

copied on this letter. The memorandum must contain a copy of the contractor Readiness to Proceed letter and verify EM readiness to oversee operations. The verification should be based upon DOE oversight of the contractor's readiness preparation, oversight of their readiness review, and on the DOE line management's management self assessment (required for ORRs). These eclaration of readiness documents may contain a limited, manageable list of open pre-start findings. If HQ is the Startup Authority, the contractor Readiness to Proceed letter with line management recommendation is forwarded to them through the Assistant Manager of Environmental Management with their concurrence.

5.3.7.3 For ORRs and RAs, the Startup Authority will authorize the review team lead to begin the review.

5.3.7.4 For FRRs, the PM will notify the FRR team lead that the review may begin.

## 5.4 Conduct of the Review

5.4.1 The review will be conducted in accordance with the Implementation/Review Plan.

5.4.2 An in-briefing meeting will be held at the onset of each review to discuss logistics and to introduce team members to their contractor counterparts. The in-brief meeting will be coordinated by the review team lead.

5.4.3 Review team members must conduct a sufficient level of review to verify that all readiness criteria have been met, or that sufficient justification is in place for instances where a given requirement is determined not to be applicable.

5.4.4 Review team members must be able to document that they have verified acceptability or non-acceptability of the readiness criteria. This verification can be done by using of a rigorous log keeping to record observations and interviews, using checklists, or reproducing the documentation that demonstrates readiness.

5.4.5 Review team meetings will be held, as appropriate, to ensure close communication of issues to the Team Leader and to identify widespread or systematic problems that may cross several disciplinary areas.

5.4.6 ORR team members will utilize Forms 1 and 2 described in Appendix II to document the review. RAs and FRRs will utilize the process described by the Implementation/ Review Plan. Regular meetings with project staff will be offered to communicate emerging issues.

5.4.7 At the conclusion of the review, the Team Leader will conduct an exit meeting at which a draft copy of all pre-start and post-start findings and observations will be presented. The contractor must use the information presented in this meeting as a basis for initiation or continuation of program CAs.

5.4.8 After completion of the field portion of the review, the review Team Lead will coordinate the development of the assessment final report (see section 5.4.13) which

will be furnished to the contractor by formal letter through the COR. The letter will require the contractor to develop and submit to DOE a corrective action plan (CAP) in response to the review findings. The CAP will include, as a minimum, corrective actions for all pre- and post-start Priority 2 findings.

5.4.9 The review Team Lead will ensure that the final report and findings are entered into the ORO ORION database within one week of completion of the final report.

5.4.10 The FPD will ensure review and approval of the contractor's CAP when submitted. The FPD will also ensure the verification of closure of pre-start findings. For ORRs and RAs, the actions that are taken to verify closure of pre-start findings will be documented on a Finding Resolution Form. (Form 3, see Appendix IV). All issues (findings) from the review will be tracked in the ORO ORION corrective action tracking system to closure.

5.4.11 After closure of all pre-start CAs and approval of CAs for post-start findings, the FPD will prepare a Startup Authorization memorandum for signature by the Startup Authority. For ORRs/RAs, the memorandum must contain a statement that the operational readiness process required by DOE Order DOE O 425.1C has been completed, that all pre-start findings have been verified closed, and that an acceptable CAP is being tracked for post-start findings.

5.4.12 Upon signature of the Startup Authorization memorandum, the facility/activity may be started or restarted.

5.4.13 Final Report Development

5.4.13.1 The review Team Leader will collect all input from team members and finalize a report within two weeks of the review completion.

5.4.13.2 The Report will include the following information:

[a] objective of the review;

[b] scope of the review including:

- functional areas reviewed;
- names of Team Leader and team members and their respective areas of review responsibility;
- actual dates of the review; and
- summary of review approaches that were used;

[c] results of the review, including summaries of readiness by functional review area (e.g., Personnel and Training, Procedures and Management Controls, Facilities and Equipment, pre-start and post-start findings); and conclusion.

5.4.13.3 The Final Reports for ORRs have specific content and format requirements. Refer to DOE STD 3006-2000, Section 5.9.3.1 for the ORR Final Report format requirements.

5.4.14 QAD will maintain an evidence file for each assessment. Documentation will include sign in sheets for the opening and closing meetings for the review, the POA,

Implementation Plan, information provided at the closeout meeting, the final report, correspondence, and any closure documentation.

### 5.5 Composition, Training, and Qualifications of ORR, RA, and FRR Teams

5.5.1 Team Composition: Startup or restart reviews will be led and performed by personnel that are not directly involved with conducting, supervising, or managing the activity being evaluated. PMs, Facility Representatives, and other ORO personnel (including support contractors), responsible for the evaluation of program activities may participate as observers or subject matter experts (SMEs). Team Leaders for ORRs must not be from offices with direct line management responsibility for the work being reviewed as required by DOE Order DOE O 425.1C. Team Leaders for RAs and FRRs can be within the EM line management, but must be independent of the work that they are reviewing.

5.5.2 Assessment Personnel Qualifications: Assessment personnel must have technical knowledge of the area assigned to evaluate, and knowledgeable of evaluation processes and methods. This knowledge may be gained through experience or appropriate training.

5.5.3 Team Leader Qualifications: All Team Leaders for startup or restart reviews must have the personal attributes, skills, and experience to manage all phases of the assessment and be trained to DOE O 425.1C. To maintain team lead status, they must participate in at least three startup or restart reviews every two years. Additionally, team leads should have successfully completed a formal lead auditor training course based on a recognized standard (ISO, NQA-1, DOE Orders, ASQC).

## 6.0 RECORD KEEPING

The POAs, Implementation Plans, assessment plans, review reports, CAPs, and other formal assessment correspondence are considered quality records and will be retained for at least three years in the EM Record Keeping system. Thereafter, final retention will be the responsibility of the ORO Records Management Program.

## 7.0 APPENDICES/TABLES

| | |
|---|---|
| 7.1 Appendix I: | Review Needs Determinations |
| 7.2 Table I-1: | Approval Authority Determination Table |
| 7.3 Appendix II: | Operational Readiness Review and Readiness Assessment Plan-of-Action Checklist |
| 7.4 Appendix III: | Deficiency Form (Form 2) |
| 7.5 Appendix IV | Finding Resolution Form (Form 3) |
| 7.6 Appendix V: | ORR/RA/FRR Approval |

# Appendix I

## REVIEW NEEDS DETERMINATIONS

### A. Startup or Restart Review Needs Determination for Category 1, 2, and 3 Nuclear Facilities

Step 1: Ensure that the action is considered a startup or restart.

As defined in DOE Standard DOE-STD-3006-2000, PLANNING AND CONDUCT OF OPERATIONAL READINESS REVIEWS (ORR), a startup is "the initial operation of a facility or process to perform program work" and a restart is "the recommencement of program work." The Standard further defines Program Work as: "Work in a reactor or nonreactor nuclear facility that is accomplished to further the goals of the facility mission and/or the program for which the facility is operated. Program work is not accomplished when a facility is shutdown. Program work does not include work that would be required to maintain the facility in a safe shutdown condition, minimize radioactive materials storage, or accomplish modifications and correct deficiencies required before program work can recommence."

Step 2: Ensure that the facility/activity is a nuclear facility/activity and determine its hazard category.

NOTE: An activity conducted within a nuclear facility *does not necessarily mean that it is a nuclear activity.* One must evaluate the actual risks and quantities of nuclear materials involved in the specific activity or with the potential to be affected by the activity. DOE Standard DOE-STD-1027-92, *HAZARD CATEGORIZATION AND ACCIDENT ANALYSIS TECHNIQUES FOR COMPLIANCE WITH DOE ORDER 5480.23, NUCLEAR SAFETY ANALYSIS REPORTS,* should be consulted for guidance in determining if the facility is a nuclear facility and, if so, its hazard category.

Step 3: Determine if a facility/activity is being restarted following a shutdown: if not, go to Step 4. Determine if the shutdown was caused by a safety related issue (management directed or due to operations outside of the safety basis). If the shutdown was due to normal planned cessation of operations, e.g., a maintenance outage, determine the length of time that the operation has been shut down. Go to Table I-1 to determine review need.

Step 4: Determine if the facility/activity startup or restart is a New Facility/Activity Startup or a Restart Following a Modification to an Existing Facility/Activity. This step will require some interpretation and professional judgment. If the facility/activity is a New Facility/Activity, go to Table I-1 for determination of review need and startup authority. If the startup or restart is a Modification to an Existing Facility/Activity, go to Step 5.

NOTE: The start of a new unit process or a new operation does not necessarily mean that the startup action is a New Facility/Activity startup action. If the facility being started is a new unit process that is a component or part of a larger operating system (e.g., a new treatment unit on an existing wastewater treatment system), the startup may be considered a Facility Modification. Similarly, if the startup of a new EM field activity is part of a larger existing field operation or program, it may also be an Activity Modification (e.g., a new enriched uranium removal process that is part of an existing uranium deposit removal program). However, if the facility/activity involves a new contractor, new management system, new physical components/structures, or new safety authorization basis, the facility/activity startup will likely be considered a New Facility/Activity.

Step 5: Determine if the Facility Modification is a Major or Minor modification.

Major modifications could include, but are not limited to:

(1) substantial changes that would create new and un-reviewed risks to worker/public safety:
(2) changes that would result in a substantial public or regulatory relations risk;
(3) a substantial increase in risks to worker/public safety even though the risk scenario has been previously reviewed and included in facility safety documents: and
(4) major organizational or management system changes for the operation of a nuclear facility/activity (e.g., the operation of a nuclear facility is turned over to a new contractor who chooses to have a large scale change of staffing and procedures).

Minor modifications could include, but are not limited to:

(1) changes that create no new and un-reviewed risks and that do not substantially result in an increase in risk:
(2) the addition of new processes or activities to an existing facility/activity that are covered under the existing safety authorization basis; and
(3) modifications that are similar to previous modifications that have been successfully implemented.

If the facility/activity involves a major modification, go to Table I-1 to determine review need. If the facility/activity involves a minor modification, the restart will be considered in the Other Restarts category. For the Other Restarts category, the Startup Authority may approve a contractor only readiness assessment, either retaining Approval Authority or conveying it to the contractor.

**B. Review Needs Determinations Involving Non-Nuclear, Radiological, and Other Industrial Facilities**

Step 1: Ensure that the facility is NOT a nuclear facility.

Step 2: If the program involves a sufficient risk to worker/public safety, environmental protection, financial security, national security, or public relations, a FRR should be performed. The level of review and documentation of the FRR can approach that of an ORR and should be conducted if program risks warrant such a review, and if ORO Management approves of this review course. If the program does not warrant a FRR, the program should be started following routine contractor readiness verification processes.

# TABLE I-1

## APPROVAL AUTHORITY DETERMINATION TABLE

| TYPE OF STARTUP OR RESTART | | | | | | |
|---|---|---|---|---|---|---|
| Category and Classification of Facility/ Activity | New Facility or Activity | Restart with Substantial Modifications | Shutdown Caused by Operations Outside Safety Basis | DOE Management Directed, Unplanned Shutdown | Restart after extended shutdown | Other Startups/ Restarts (See Note 1) |
| Nuclear, Category 1 | ORR (Secretary of Energy/Designee) | ORR (HQ Secretarial Officer) | ORR (Safety Basis Authorization Authority) [b] | ORR Shutdown Official [c] | ORR (HQ Secretarial Officer) 6 months[a] | See Note 2 |
| Nuclear, Category 2 | ORR (Secretary of Energy/Designee) | ORR (HQ Secretarial Officer/Designee) | ORR (Safety Basis Authorization Authority) [b] | ORR Shutdown Official [c] | ORR (HQ Secretarial Officer/designee) 12 months[a] | See Note 2 |
| Nuclear, Category 3 | ORR (HQ Secretarial Officer/Designee) | RA (Ops Office Manager/Designee)[d] | ORR (Safety Basis Authorization Authority) [b] | ORR Shutdown Official [c] | RA Ops Office Manager/Designee[a,d] | See Note 2 |

[a] Extended shutdown per 425.1C for a Category 1 Nuclear Facility is 6 months. Extended shutdown per 425.1C for Category 2 Nuclear Facilities is 12 months. Per this procedure, extended shutdown exceeding for Category 3 facilities is 12 months; extended shutdowns for non-nuclear, radiological, and other industrial facilities is 18 months.

[b] Official designated to approve safety basis that was violated.

[c] Secretarial Officer may designate other Authorization Authority based on specific circumstances.

[d] RA required per this procedure.

NOTE 1: Other Startup/Restarts can include but are not limited to:

- An RA may be required for any activity at a Category 1 Nuclear Facility which does not require an ORR.
- The AMEM may direct an increased level of review from that proscribed in the table or direct the performance of an RA for the startup or restart of any activity which is deemed to present an increased risk to DOE.
- The Authorization Authority may approve a contractor only RA, retaining Approval Authority, or designate approval authority to the contractor for routine, but still requiring an RA, startups/restarts.

NOTE 2: Review type as directed by DOE official and authorization authority to be a level commensurate with official directing the review.

# Appendix II

## OPERATIONAL READINESS REVIEW AND READINESS ASSESSMENT PLAN-OF-ACTION CHECKLIST

The plan-of-action should clearly delineate management responsibilities, authority, and accountability for the ORR (as specified in the DOE O 425.1C) and include the following:

| ELEMENT | COMPLY (YES/NO) | JUSTIFICATION |
|---|---|---|
| Notice of the intent to conduct an ORR | | |
| Identification and description of the facility | | |
| Team Leader | | |
| Prerequisites | | |
| Define the breadth of the review | | |
| Estimated start date(s) of the review | | |
| Estimated time needed to conduct the review | | |

# Appendix III

## DEFICIENCY FORM
## (FORM 2)

| | | | | |
|---|---|---|---|---|
| Functional Area: | Objective No.: | Finding/ Observation | Pre-start<br>Post-start | Issue No.:<br>Rev. No.:<br>Date: |

ISSUE:

REQUIREMENT:

REFERENCE(S):

DISCUSSION:

| | |
|---|---|
| Inspector:_____ | Approved: _____<br>Team Leader |

# Appendix IV

## FINDING RESOLUTION FORM
## (FORM 3)

| Functional Area: | Objective No.: | Issue No.: |
|---|---|---|
| Emergency Preparedness | EP-1 | EP-1-1 |
| ISSUE:<br><br>Finding Designation:<br>Prestart Poststart | | |
| Date Received:<br>Responsible Individual:<br>Phone#: | | |

Action Plan:

Resolution:

Corrective Action Completion

| |
|---|
| Verified By: _____ Date: |
| Verified By: _____ Date: |

Department of Energy
Oak Ridge Operations
Office of Environmental Management
Procedure

# STARTUP AND RESTART OF OAK RIDGE RESERVATION ENVIRONMENTAL MANAGEMENT PROGRAM WORK

EM – 2.1
Revision 3

| Concurrence | |
|---|---|
| Rtg. Symbol | EM-94 |
| Initials | Kadas |
| Date | 8/8/08 |
| Rtg. Symbol | EM-94 |
| Initials | Harness |
| Date | 8/11/08 |
| Rtg. Symbol | EM-94 |
| Initials | Perkins |
| Date | 8/11/08 |
| Rtg. Symbol | EM-90 |
| Initials | Boggs |
| Date | |
| Rtg. Symbol | EM-90 |
| Initials | McCracken |
| Date | 8/11/08 |
| Rtg. Symbol | |
| Initials | |
| Date | |
| Rtg. Symbol | |
| Initials | |
| Date | |

**Prepared:** _____ _____
Karen Kadas — Date
Procedure Preparer

**Approved:** _____ _____
Stephen H. McCracken — Date
Assistant Manager for Environmental Management

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