1. PURPOSE

This laboratory wide procedure (LWP) establishes the requirements for *startup* (see def.) of new *nuclear facilities* (see def.) and for the *restart* (see def.) of existing nuclear facilities that have been shut down. In the context of Department of Energy (DOE) requirements for startup and restart, nuclear facilities are those activities or operations that involve radioactive and/or fissionable materials in such form or quantity that a nuclear hazard potentially exists to the employees or the general public.

The nuclear facility shall be started up (or restarted) only after documented independent reviews of readiness have been conducted and the approvals specified have been received. Readiness reviews are not intended to be tools of line management to achieve readiness; rather, they provide an independent confirmation of readiness to start or restart. LWP-9903, "Performing Management Self-Assessments for Readiness" provides instructions to assist managers in preparing for a readiness review.

This LWP provides a process to ensure the appropriate type of independent readiness review prior to startup or restart of nuclear facilities. This process is also used to determine when the *resumption* (see def.) of *program work* (see def.) does not constitute a restart in the context of DOE requirements. The level of rigor in an independent readiness review, referred to as the depth and breadth of the review, is based upon set criteria that consider factors such as the *hazard category* (see def.), reason for and length of shutdown, and impacts on the safety basis.

For a nuclear facility startup or restart requiring an *Operational Readiness Review (ORR)* (see def.) or *Readiness Assessment* (RA) (see def.), the user should reference DOE O 425.1C, "Startup and Restart of Nuclear Facilities" and DOE-STD-3006-2000, "Planning and Conduct of Operational Readiness Reviews." Detailed implementing instructions for planning and performing ORRs and RAs are provided in the DOE standard; therefore, the information is not duplicated in this procedure.

2. SCOPE AND APPLICABILITY

This LWP applies to initial hazard identification and screening for startup requirements, startup notification report preparation and submittal, ORR/RA planning and performance, and exemptions.

This procedure applies to the startup of new or the restart of existing nuclear facilities. This procedure may be directed for use by other activities when invoked by DOE or Idaho National Laboratory (INL) management.

This procedure does not apply to:

1. Restarts of nuclear facilities where the basis for shutdown does not require an ORR/RA as identified in Appendix A, Table A-1

2. Activities regulated through a license by the Nuclear Regulatory Commission (NRC) or a state under an agreement with the NRC, including activities certified by the NRC under Section 1701 of the Atomic Energy Act

3. Activities conducted under the authority of the Director, Naval Nuclear Propulsion Program, pursuant to Executive Order 12344, in force under Public Laws 98-525 and 106-65

4. Activities regulated by the Department of Transportation pursuant to 49 CFR 173.7(b)

5. Less than hazard category 3 nuclear facilities and nonnuclear facilities. Although exempt from applicability under this procedure, the RA concepts discussed within may be tailored for usage in the startup of nonnuclear facilities. For less than hazard category 3 nuclear facilities and nonnuclear facility startups, consideration should be given to institutional programs, such as (a) a construction program's operability tests prior to new facility startup, (b) the radiological program plan for restart of radiological facilities, or the (c) conduct of maintenance program for all facilities; that capture the philosophy of determination of a facility's readiness for

operation.

For construction projects, the need for an ORR or RA should be determined and documented early in the design process. This determination should be made by the affected Nuclear Facility Manager and then documented in one or more of the project planning documents required by MCP-2869, "Construction Project Turnover and Acceptance."

Appendix A, Table A-1, should be used in determining if an ORR or RA is required depending upon the basis for shutdown and the hazard category of the nuclear facility. Appendix A also includes criteria providing a brief description of the shutdown scenarios and some typical situations. These criteria are used when developing an activity description (Appendix B) and performing the activity evaluation (Appendix C).

3. RESPONSIBILITIES/PREREQUISITES

3.1 Responsibilities

Performer	Responsibilities
Activity Leader	Coordinate personnel, documentation, and other readiness activities
Nuclear Facility Manager (NFM)	Monitor operations to identify needs, assign personnel, obtain *Operational Safety Board (OSB)* (see def.) evaluation and *Cognizant Manager* (see def.) approval of proposed nuclear facility start or restart type of review, establish readiness for startup or restart, and document closure of response actions
Operational Safety Board (OSB)	Evaluate and concur with the proposed nuclear facility startup or restart type of review
Cognizant Manager	Appoint readiness review team leader, approve plan of action, and certify facility readiness for startup or restart
Operational Readiness Review Team Leader/Readiness Assessment Team Leader	Conduct readiness reviews, approve corrective actions, and verify closure of findings

4. INSTRUCTIONS

4.1 Initial Hazard Identification and Screening for Startup Requirements

4.1.1 NFM: Monitor Operation's plans, and identify new activities/operations that may result in a nuclear facility startup or restart.

4.1.2 Cognizant Manager/NFM: Appoint an *activity leader* (see def.) at the time a potential startup or restart is identified. Ensure management self-assessment activities are performed in accordance with LWP-9903.

4.1.3 NFM: Request support as necessary from the OSB during execution of this procedure.

4.1.4 Activity Leader: Ensure a readiness review project case file is established and maintained throughout the startup or restart review process, adding to the file the documents listed below, as appropriate, when each step in the process is executed. Retain copies of items C and D in the readiness review project case file if these documents are not unique to the startup or restart being performed.

A. Appendix B, Activity Description

B. Appendix C, Activity Evaluation

C. Startup Notification Report (applicable to this activity)

D. Startup Notification Report approval by DOE

E. Plan of action (POA)

F. Implementation plan

G. Readiness to Proceed Memorandum(s)

H. ORR/RA *Final Report(s)* (see def.)

I. Closure package containing *prestart finding* (see def.) and/or *poststart finding* (see def.) closure or resolution documentation

J. Start or restart approval documentation.

4.1.5 Activity Leader: Prepare detailed description and initial hazard identification and assessment per Appendix B based on the following, as applicable:

A. A walkdown of the area where the activity will be performed, including a visual inspection of the work area, condition of equipment and tooling, accessibility, lighting, and other pertinent

factors

B. Identification and review of existing source documents that describe the activity or the process, such as process specifications, safety basis, design drawings, etc. (may be obtained from the Project Management Organization, equipment vendor, etc.)

C. Review of an Unreviewed Safety Question (USQ) evaluation for the activity in accordance with MCP-123 or AWP-2.7, "Unreviewed Safety Questions"

D. Review of a hazard identification analysis per MCP-3562, "Hazard Identification, Analysis and Control of Operational Activities;" MCP-3571, "Independent Hazard Review;" STD-101, "Integrated Work Control Process," or ANL-West Environment, Safety, and Health Manual, Section 4.1K, "Safe Work Program and Hazard Assessment Process," to identify any potential environmental, health, or safety hazards associated with this activity

E. Evaluation of any applicable environmental permits that govern operations to ensure the proposed work activity will not violate or exceed approved limits

F. Review and evaluation of any other issues that may arise as a result of performing this activity in the facility (Ask: "What could go wrong?").

4.1.6 Activity Leader: Notify the nuclear facility manager in the event that the scope changes during the development of Appendix B.

4.1.7 Activity Leader: Evaluate Appendix B for impacts of scope change and determine the required actions.

4.1.8 Activity Leader: Develop a separate Appendix C for each nuclear facility

startup or restart.

4.1.9 Activity Leader: Obtain nuclear facility manager agreement that the OSB evaluation of the activity description (Appendix B) and type of review (Appendix C) is ready to proceed.

4.1.10 OSB Chairman: Identify the members of the OSB required to participate in the evaluation. Notify the Activity Leader to list the members on Appendix C.

NOTE: *The Activity Leader may provide a draft Appendix C and supporting documentation in advance for review by the OSB. The record copy of the appendix will be developed during the OSB meeting.*

4.1.11 OSB Chairman: Convene the OSB for the purpose of conducting a startup or restart evaluation.

4.1.12 Activity Leader: Attend the OSB meeting(s), and present the activity (including a review of the proposed work scope, whether or not the work scope and hazards are within the approved safety basis, and recommended type of review) and any needed supporting documentation.

4.1.13 Activity Leader: Complete the applicable portions of Appendix C during OSB review.

4.1.14 OSB: Evaluate the proposed activity using the criteria in Appendix C and the information provided by the Activity Leader.

4.1.15 Activity Leader: Submit Appendix C for concurrence and approval.

4.1.16 NFM: Concur with type of review by signing Appendix C.

4.1.17 OSB Chairperson: Concur with type of review by signing Appendix C.

4.1.18 Cognizant Manager: Approve the type of review required by signing Appendix C.

4.2 Startup Notification Report

NOTE: *The Startup Notification Report (SNR) is an important element in the management of the readiness review process. The SNR ensures that INL line management through DOE-ID and DOE-HQ (if applicable) is included in the decision process as to the type of readiness review for every startup or restart of nuclear facilities.*

4.2.1 *Contractor Startup Notification Report Approval Authority* (see def.): Prepare an SNR to notify DOE-ID of the intent to startup or restart an activity in accordance with the following:

A. Readiness Assessment—Notify DOE-ID of the intent to restart the activity at least 90 days before the expected start date, if possible

B. Operational Readiness Review—Notify DOE-ID of the intent to startup or restart the activity at least one year before the expected start date, if possible.

4.2.2 Cognizant Manager: Considering the time requirements specified above, provide the following information for the SNR using completed Appendixes B and C for all startups or restarts of nuclear facilities:

A. A brief description of the facility or *program work* (see def.)

B. The reason for non-operation (for example, maintenance or modification outage, no program work, new facility, shutdown for safety concerns, etc.)

C. The approximate date operations were last conducted (for restarts) and the projected date for the startup

D. The proposed type of readiness review

E. The basis or justification for the proposed type of readiness review

F. The proposed authorization authority

G. (For RAs only) A recommendation of whether DOE-ID should conduct an independent RA, monitor and approve the results of the contractor RA, or designate the contractor as the authorization authority.

4.2.3 Contractor Startup Notification Report Approval Authority: Transmit the SNR to the DOE-ID Manager with a courtesy copy to the Deputy Assistant Manager for Operations (DAMO) and the DOE-ID Director, Operational Safety Division.

4.2.4 Contractor Startup Notification Report Approval Authority: Submit a SNR at least twice per year that updates information from the previous period for startups and restarts that have not yet occurred,
AND add information for each startup or restart that has been identified since the last update.

4.2.5 Cognizant Manager: IF an ORR is required,
THEN GO TO Section 4.3
WITHOUT RETURNING TO this step.

4.2.6 Cognizant Manager: IF an RA is required,
THEN GO TO Section 4.4
WITHOUT RETURNING TO this step.

4.3 Operational Readiness Review

4.3.1 Cognizant Manager: AFTER the DOE-ID Manager approves an ORR as the appropriate readiness review for the intended startup or restart,
THEN appoint a Contractor ORR Team Leader (CORRTL) with the qualifications for managing and conducting the Contractor ORR as described in DOE-STD-3006-2000, Section 5.1.5.

NOTE: *The proposed breadth for the ORR is a key section of the ORR POA. The breadth should be derived starting with the minimum core*

requirements listed in DOE O 425.1C and the physical scope in the facility/activity description. The discussion should support the decision to eliminate any core requirements based on recent, independent appraisals in the excluded areas.

4.3.2 Cognizant Manager/NFM: Develop the Contractor ORR POA using DOE-STD-3006-2000, Section 5.9.1, as a guide.

4.3.3 Cognizant Manager: Submit the ORR POA to DOE-ID for review and comment; and startup or restart authority approval.

4.3.4 Cognizant Manager: WHEN the POA is approved, THEN issue the POA to the CORRTL for action.

4.3.5 CORRTL: Appoint members to the Contractor ORR team (CORRT) with the qualifications described in DOE-STD-3006--2000, Section 5.1.5.

NOTE: *The Implementation Plan includes the Criteria and Review Approaches (CRAs) that will be used to review the core requirements as defined in the POA. The CRAs define the depth of the review and should be developed in Criteria and Review Approach Documents (CRADs) that may be attached as an appendix to the Implementation Plan.*

4.3.6 CORRT: Develop the Contractor ORR implementation plan based on the approved POA using DOE-STD-3006-2000, Section 5.9.2, as a guide.

4.3.7 CORRTL: Approve the implementation plan and provide the implementation plan to DOE-ID for review and comment.

NOTE: *A small list of well defined open items may exist when readiness to proceed with the Contractor ORR is declared. This manageable list of open items should not be of such a nature individually or in aggregate to preclude an adequate review of any area by the Contractor ORR.*

4.3.8 Cognizant Manager: WHEN all prerequisites specified in the POA have been met,
THEN formally declare readiness to proceed with the Contractor ORR.

4.3.9 CORRT: Conduct the Contractor ORR in accordance with the implementation plan.

4.3.10 CORRT: Include the following in the Contractor ORR final report:

A. A conclusion as to whether startup or restart of the nuclear facility can proceed safely

B. All readiness review *findings* (see def.)

NOTE: *The lessons learned section may be deferred until after operations begin.*

C. A lessons learned section that may relate to design, construction, operation and decommissioning of similar facilities and to future ORR efforts, as appropriate, using DOE-STD-3006-2000, Section 5.8 as a guide.

D. A statement that a set of requirements to govern safe operations of the facility has been formalized and agreed upon with DOE through the contract and the status of implementation

E. A statement regarding the team leader's assessment of the adequacy of the implementation of core functions and guiding principles of an Integrated Safety Management System (ISMS), as described in PDD-1004, "Integrated Safety Management System"

F. The qualifications of ORR team members.

4.3.11 CORRTL: Approve and issue the Contractor ORR final report.

4.3.12 Cognizant Manager: Notify the DOE-ID Division Director that the Contractor ORR has been successfully completed.

4.3.13 NFM: Document response actions to findings in a closure package using DOE-STD-3006-2000, Sections 5.7.2 and 5.7.3, as a guide.

4.3.13.1 Screen all prestart and poststart findings for inclusion into the Issue Communication and Resolution Environment (ICARE) following the requirements of LWP-13840, "Corrective Action System."

4.3.13.2 Enter those prestart and poststart findings into the ICARE system that require tracking in accordance with the requirements of LWP-13840.

4.3.14 CORRT: Verify the adequacy of closure for prestart findings, and concur with corrective action plans addressing poststart findings.

NOTE: *The Readiness to Proceed Memorandum is used to certify readiness for startup or restart upon completion of the identified open prestart items and the DOE ORR. A small list of well-defined open items may exist when readiness to proceed with the DOE ORR is declared. This manageable list of open items should not be of such a nature individually or in aggregate to preclude an adequate review of any area by the DOE ORR.*

4.3.15 Cognizant Manager: WHEN all actions required for startup or restart have been completed,
THEN forward the Readiness to Proceed Memorandum and a copy of the CORR final report to the DOE startup or restart authority.

4.3.16 NFM: Upon completion of the DOE ORR, document response actions to findings in a closure package using DOE-STD-3006-2000, Sections 5.7.2 and 5.7.3, as a guide.

4.3.17 DOE ORR Team: Verify the adequacy of closure for prestart findings and approve corrective action plans addressing poststart findings.

4.3.18 Cognizant Manager: WHEN the DOE ORR Team verifies the adequacy of closure for prestart findings and approves the corrective action plans addressing poststart findings,
THEN certify by correspondence to the DOE startup or restart authority readiness for startup or restart.

4.3.19 Cognizant Manager: WHEN approval is granted by the DOE startup or restart authority,
THEN determine when to start up or restart the activity.

4.3.20 NFM: Retain records in accordance with Section 5 of this procedure.

4.4 Readiness Assessment

4.4.1 Cognizant Manager: WHEN the DOE-ID Manager approves an RA as the appropriate readiness review for the intended restart or resumption,

THEN appoint a Contractor RA Team Leader (CRATL) with sufficient technical and assessment expertise to ensure the credibility of the results of the RA.

NOTE: *The scope (breadth and depth) of an RA is a management decision utilizing the graded approach. An RA may be as short and simple as a restart check procedure or it may approach the breadth and depth of an ORR. In both cases, a defensible management decision is required to approve the scope. The breadth of the RA is documented in the POA. The depth of the RA is documented in either the POA for restart of relatively simple activities/operations or separately for more complex activities/operations.*

4.4.2 Cognizant Manager/NFM: Develop the RA POA to include the following:

NOTE: *The breadth is established by the criteria selected for review and is determined by the need for independent verification of particular aspects of readiness prior to restart. Factors such as complexity of the activity and the modifications or repairs accomplished during non-operation should be considered when selecting criteria. DOE-STD-3006-2000, Appendix 1, "Application of the Graded Approach in ORR Planning," discusses principles that are also applicable when selecting criteria to be assessed during a RA.*

A. Breadth of the RA

NOTE: *The depth is established by identifying the actions to be performed by the RA team to verify the identified criteria are met. These actions may be included in the RA POA for restart of relatively simple activities/operations. The actions needed to verify readiness for more complex activities/operations require greater definition approaching the detail provided in an ORR implementation plan and should be developed by the RA team and issued separately from the POA.*

B. Depth of the RA or a statement noting the depth of review will be established by the RA team

C. Prerequisites for the RA

D. CRATL designation.

4.4.3 Cognizant Manager: Submit the RA POA to the startup or restart authority for approval.

4.4.4 CRATL: WHEN the startup or restart approval authority approves the POA,
THEN appoint Contractor RA team (CRAT) members, if needed, with the necessary technical and assessment expertise to ensure the credibility of the results of the RA.

NOTE: *DOE-STD-3006-2000, Appendix 1, "Application of the Graded Approach in ORR Planning," and Appendix 4, "Writing Guide," discuss principles that are also applicable when defining the depth of an RA for restart of complex activities/operations.*

4.4.5 CRAT: IF the depth of the RA is not identified in the approved POA, THEN determine and document the depth.

4.4.6 CRATL: IF the depth of the RA is not identified in the approved POA, THEN approve the depth and provide via formal correspondence to the

startup or restart authority for review and comment.

NOTE: *The Contractor RA may be sequenced in parallel with final actions to gain readiness to resume operations. The principle that the RA verifies areas in which readiness has been gained remains critical to the process. Therefore, the relevant prerequisites must be met prior to start of the individual parts of the RA.*

4.4.7 Cognizant Manager: WHEN prerequisites specified in the POA have been met,
THEN formally declare readiness to proceed with the Contractor RA.

NOTE: *No RA team member shall review work for which they are directly responsible.*

4.4.8 CRAT: Perform and document RA activities and findings.

4.4.8.1 CRATL: Ensure the RA record is adequate to identify what was done, the results, and the recommendation concerning resumption of operations.

4.4.9 Cognizant Manager: Notify the DOE-ID Division Director that the Contractor RA has been successfully completed.

4.4.10 NFM: Document response actions to findings in closure package using DOE-STD-3006-2000, Sections 5.7.2 and 5.7.3, as a guide.

4.4.10.1 Screen all prestart and poststart findings for inclusion into the ICARE system following the requirements of LWP-13840, “Corrective Action System.”

4.4.10.2 Enter the prestart and poststart findings that require tracking into the ICARE system in accordance with the requirements of LWP-13840.

4.4.11 CRAT: Verify the adequacy of closure for prestart findings, and concur with corrective action plans addressing poststart findings.

NOTE: *If a DOE RA is also required, the sequence of the Contractor and DOE RAs can be more flexible as approved by the restart authority. A Readiness to Proceed Memorandum is used to certify readiness for restart upon completion of the identified open prestart items and the DOE RA. A small list of well defined open items may exist when readiness to proceed with the DOE RA is declared.*

4.4.12 Cognizant Manager: IF a DOE RA is required,
THEN forward the Readiness to Proceed Memorandum and a copy of the Contractor RA final report to the DOE startup or restart authority when all actions required for restart or resumption have been completed.

4.4.13 NFM: IF a DOE RA is required,
THEN document response actions to findings in a closure package using DOE-STD-3006-2000, Sections 5.7.2 and 5.7.3, as a guide.

4.4.13.1 Screen all prestart and poststart findings for inclusion into the ICARE system following the requirements of MCP-598.

4.4.13.2 Enter those prestart and poststart findings into the ICARE system that require tracking in accordance with the requirements of LWP-13840.

4.4.14 DOE RA Team: IF a DOE RA is required,
THEN verify the adequacy of closure for prestart findings and approve corrective action plans addressing poststart findings.

4.4.15 Cognizant Manager: IF a DOE RA is required,
THEN certify by correspondence to the DOE startup or restart authority readiness for restart.

4.4.16 Cognizant Manager: WHEN all prestart findings are satisfied and approval is granted by the startup or restart approval authority,
THEN determine when to restart the activity.

4.4.17 NFM: Retain records in accordance with Section 5 of this procedure.

4.5 Exemptions

4.5.1 Cognizant Manager: IF an exemption from an ORR/RA requirement is warranted, AND the exemption would not be prohibited by law AND it would not present an undue risk to public health and safety, the environment, or facility workers,
THEN develop an exemption request as discussed in Appendix D.

4.5.2 Cognizant Manager: Submit the exemption request, addressing the essential elements of DOE M 251.1-1A, to the DOE-ID Manager for DOE approval.

5. RECORDS

Readiness Review Project Case File

NOTE: *LST-9, "INEEL Records Schedule Matrix," and the applicable facility, organization program, or project records management plan provides current information on uniform file code, disposition authority, and retention period for these records.*

6. DEFINITIONS

Activity Leader. The person designated to develop and execute the startup activities, which include the activity description startup plan, etc., and follow through on corrective actions resulting from the review. An individual designated with the responsibility for the initiation or implementation of an activity.

Cognizant Manager. The senior line manager responsible for safety in the physical area where the activity or operation is to occur.

Contractor Startup Notification Report Approval Authority. The member of contractor senior management responsible to approve and transmit the SNR to DOE-ID.

Directed Shutdown. An unscheduled termination of program operations or activities directed by contractor management, DOE-ID, or DOE Headquarters.

Evidence files. Records of startup or restart activities/operations that may be included in the file or referenced by a number and location document.

Extended Shutdown. A *planned shutdown* (see def.) that exceeds the time limits of Appendix A, Table A-1.

Facility Shutdown. The situation in which a reactor is taken subcritical either manually or automatically to a safe shutdown condition, or the condition in which a non-reactor nuclear facility ceases program work.

Final report. A document prepared by the ORR/RA team at the completion of the ORR/RA, which describes the results of the ORR/RA. The final report contains the methodology used to conduct the review, the conclusions drawn by the team, the findings identified, and a recommendation as to the readiness of the facility to start program work. DOE-STD-3006-2000, Section 5.9.3, provides additional details concerning the preparation and content of the final report.

Finding. An identified deficiency. (Findings may be classified as either prestart or poststart, as defined in this section.)

Hazard Categories. The consequences of unmitigated releases of radioactive and/or hazardous material are evaluated in accordance with DOE-STD-1027-92, "Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports," and classified by the following hazard categories:

1. Category 1: The hazard analysis shows the potential for significant off-Site consequences

2. Category 2: The hazard analysis shows the potential for significant on-Site consequences

3. Category 3: The hazard analysis shows the potential for only localized consequences.

Nonreactor nuclear facility. Those activities or operations that involve radioactive and/or fissionable materials in such form and quantity that a nuclear hazard potentially exists to the employees or the general public. Included are activities or operations that: (1) produce, process, or store radioactive liquid or solid waste, fissionable materials, or tritium; (2) conduct separations operations; (3) conduct irradiated materials inspection, fuel fabrication, decontamination, or recovery operations; (4) conduct fuel enrichment operations; (5) perform environmental remediation or waste management activities involving radioactive materials; (6) conduct nuclear explosives activities; or (7) perform nuclear experimental activities. Incidental use and generation of radioactive materials in a facility operation (for example, check and calibration sources, use of radioactive sources in research and experimental and analytical laboratory activities, electron microscopes, and X-ray machines) would not ordinarily require the facility to be included in this definition. Accelerators and reactors and their operations are not included. The application of any rule to a nonreactor nuclear facility shall be applied using a graded approach.

Nuclear Facility. A reactor or a nonreactor nuclear facility.

Nuclear Facility Manager (NFM). The line manager in charge of the nuclear facility and qualified in accordance with STD-1109, "Nuclear Facility Manager, Facility Manager, Building Manager Qualification." Nuclear facility manager roles and responsibilities are defined in NS-18303, "INL Nuclear Facilities and Nuclear Facility Managers."

Operational Readiness Review. 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.

Operational Safety Board (OSB). A multi-disciplined team chartered for a specific organization, facility, or system to provide technical and safety direction, guidance and oversight support to the line manager or system owner for the safe execution of work.

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.

Poststart finding. A finding that must be resolved, but may be corrected after the start of the activity. Poststart findings are addressed by a corrective action plan, which includes any compensatory measures taken.

Prestart finding. A finding that must be resolved before an activity can be started.

Program Work. 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 material storage, or accomplish modifications and correct deficiencies required before program work can be recommenced.

Reactor. Unless modified by words such as containment, vessel, or core, reactor means the entire nuclear reactor facility, including the housing, equipment, and associated areas devoted to the operation and maintenance of one or more reactor cores.

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.

Resumption. The continuation of program work, possibly in a different physical location and/or under a different safety basis. Resumption relies heavily on experience gained by performing similar work at a frequency sufficient to maintain proficiency (that is, the *extended shutdown* (see def.) time limits of Appendix A, Table A-1 apply). Resumption implies the following conditions are met:

- The work is performed using similar equipment, personnel and procedures
- No significant change to the safety basis or substantial modification to the process, system, or facility is required to support continuation of the program work
- Personnel demonstrate adequate knowledge of the facility safety basis prior to commencing work.

Readiness Assessment (RA). A review that is conducted to determine a facility's readiness to start or restart when an Operational Readiness Review is not required or when contractor's standard procedures for startup are not judged by contractor or DOE management to provide an adequate verification of readiness. An RA should be conducted using the graded approach with a minimum of administrative effort, consistent with the necessary formality to ensure competent management of nuclear operations.

Routine shutdown. A planned shutdown that does not exceed the extended shutdown time limits of Appendix A, Table A-1, where no significant changes to the safety basis or substantial modification of the process, system, or facility (like-for-like changes are not considered to be a modification) have been made.

Startup. The initial operation of a facility, process, or activity to perform work that is accomplished to further the goals of the facility mission and/or the program for which the facility is operated; it is *not* work that is accomplished when a facility is shut down.

Substantial. Considerable in importance, value, degree, amount, or extent. (The term "substantial" is very subjective and because of this is open to discussion. DOE Orders and Standards use this term very openly but provide no definitive guidance as to its meaning. The end result requires the contractor and DOE-HQ or DOE-ID to reach agreement through correspondence/discussions as to the meaning/definition of

"substantial" on a case-by-case basis.)

7. REFERENCES

10 CFR 830, Subpart B, "Safety Basis Requirements"

DOE Manual 251.1-1A, "Directives System Manual"

DOE Order 251.1A, "Directives System"

DOE Order 425.1C, "Startup and Restart of Nuclear Facilities"

DOE-STD-1120, "Integration of Environment, Safety, and Health into Facility Disposition Activities"

DOE-STD-3006-2000, "Planning and Conduct of Operational Readiness Reviews"

MCP-123, "Unreviewed Safety Questions"

AWP-2.7, "Unreviewed Safety Questions"

LWP-9903, "Performing Management Self-Assessments for Readiness"

NS-18303, "INL Nuclear Facilities and Nuclear Facility Managers"

MCP-2869, "Construction Project Turnover and Acceptance"

MCP-3562, "Hazard Identification, Analysis and Control of Operational Activities"

MCP-3571, "Independent Hazard Review"

STD-101, "Integrated Work Control Process"

ANL-W Environment, Safety, and Health Manual, Section 4.1K, "Safe Work Program and Hazard Assessment Process"

STD-1109, "Nuclear Facility Manager, Facility Manager, Building Manager Qualification"

8. APPENDIXES

Appendix A, ORR/RA Requirements and Criteria

Appendix B, Activity Startup or Restart Description

Appendix C, Activity Startup/Restart Evaluation

Appendix D, ORR Exemption Request

Appendix E, Procedure Basis

Appendix A
ORR/RA Requirements and Criteria

Table A-1.

NOTE: ***Deviation from the level of readiness review specified requires approval via the SNR.***

		Basis for Shutdown							
		New Facility	Unplanned Shutdown Directed By DOE Mgt Official	Extended shutdown (J)	Substantial Process, System, or Facility Modification (D)	Substantial Modification Requiring Modification of Safety Basis (H)	Shutdown Caused By Operations Outside Safety Basis	DOE Official Deeming It Appropriate	Routine Shutdown (J)
Hazard Category 1 nuclear facility	Approval Authority	Secretary of Energy (A)	Shutdown Official (C)	6 Months Cognizant Secretarial Officer (A)	Cognizant Secretarial Officer (A)		Approval Authority (B)	Approval Authority (E)	>3 Months OPS Office Manager (F)(I)
	Review Type	ORR	ORR	ORR	ORR		ORR	ORR	RA (G)
Hazard category 2 nuclear facility	Approval Authority	Secretary of Energy (A)	Shutdown Official (C)	12 Months Cognizant Secretarial Officer (A)	Cognizant Secretarial Officer (A)		Approval Authority (B)	Approval Authority (E)	>6 Months OPS Office Manager (F)(I)
	Review Type	ORR	ORR	ORR	ORR		ORR	ORR	RA (G)
Hazard Category 3 nuclear facility	Approval Authority	Cognizant Secretarial Officer (A)	Shutdown Official (C)	12 Months OPS Office Manager (F)		OPS Office Manager (F)	Approval Authority (B)	Approval Authority (E)	
	Review Type	ORR	ORR	RA (G)		RA (G)	ORR	ORR	

(A) Or Designee by indicated DOE Official. DOE Headquarters has designated DOE-ID as the POA and startup authority for

all NE and EM startups that can be delegated.

(B) Official designated to approve safety basis that was violated.

(C) Restart shall be granted by an official of a level commensurate with the official ordering the shutdown unless a higher level is designated by the Cognizant Secretarial Officer.

(D) The restart authority (approval authority) shall determine if the modifications are *substantial* (see def.) based on the impact of changes to the authorization agreement and the associated safety basis and the extent and complexity of changes: this would not necessarily be determined by the Unreviewed Safety Question evaluation.

(E) Approval authority shall be a level commensurate with the official directing the review.

(F) Or Designee by indicated DOE Official. Contractor may be designated the approval authority for startups or restarts as approved by the SNR.

(G) RA shall specify a graded approach to the tenets of ORR requirements ranging from a restart check procedure to approaching the breadth and depth of an ORR depending on the causes and duration of the shutdown and the modifications performed for an existing facility.

(H) Substantial modifications are based on extent and complexity of changes, as determined by the approval authority.

(I) Agreement between the Cognizant Manager and the DOE-ID Division Director must be reached regarding performance of an RA.

(J) Determine if initiation of specific program work is resumption or restart by completing the hazard identification and screening for startup requirements in accordance with MCP-2783. Resumption requires approval of the level of readiness review via the SNR for initial performance of the activity/operation in Hazard Category 1, 2, or 3 nuclear facilities. An activity/operation is not a resumption if extended shutdown limits have been exceeded since previous performance of the work in a similar facility.

Table A-1, ORR/RA Requirements Summary

NOTE: *The term nuclear facility, in the context of the DOE requirements for startup or restart, is different than in the context of 10 CFR 830, Subpart B, "Safety Basis Requirements." As defined by DOE-STD-3006-2000, a nuclear reactor facility inherently poses a nuclear hazard, but a nonreactor nuclear facility poses similar hazards only during the performance of program work. 10 CFR 830, Subpart B, considers a nuclear facility as being enveloped by a unique safety basis that defines physical boundaries. The paradigm that a nuclear facility is a physical location (building) must be altered, in the context of the DOE requirements for startup or restart, to understand it is the planned activity or operation that has the potential to present a nuclear hazard.*

Criteria

For each of the eight "Basis for Shutdown" scenarios listed in Table A-1, the following criteria include a brief description of the shutdown scenario, plus some typical situations that might be included under the scenario and some typical situations that would not be included. The lists of situations are not intended to be all-inclusive, but simply represent examples for guidance.

New Facility

When a new operation is conducted within a new nuclear facility, this shutdown scenario is self-explanatory. The scenario becomes more complex when a new process is planned within an existing nuclear facility, or when a new activity is not associated with a building. Some typical examples of a New Facility include the following:

1. A new building designed to house hazardous activities, processes, or systems that require preparation of safety basis documents and hazard categorization

2. A completely new process or activity within an existing nuclear facility and the new activity is not encompassed within the existing safety basis documentation

3. An expansion of program work into a new area of an existing nuclear facility that is not encompassed within the existing authorization agreement and requires substantial changes to the associated safety basis

4. Deactivation, demolition, or decommissioning of a nuclear facility, provided that the work is not encompassed within the existing authorization agreement and requires substantial changes to the associated safety basis

5. Major environmental remediation activities, provided that the work could be reasonably expected to encounter the quantities of hazardous material not encompassed within the existing authorization agreement and requires substantial changes to the associated safety basis.

The following situations would NOT be considered a New Facility:

1. A new activity that is encompassed within the existing authorization agreement and the associated safety basis

2. A new variation on approved program work within an operating facility. For example, a fuel receiving and storage facility would not need to have an independent readiness review performed before receiving a new type of fuel, provided that the new type of fuel did not change the authorization agreement or require substantial changes to the associated safety basis of the facility

3. Installation and/or use of a new tool, instrument, or piece of equipment in an operating facility, provided that the new tool, instrument, or equipment did not change the authorization agreement or require substantial changes to the associated safety basis of the facility

4. Minor environmental remediation projects or cleanups that could not be reasonably expected to encounter quantities of hazardous material not encompassed within the existing authorization agreement and the associated safety basis

5. Deactivation, demolition, or decommissioning of a nuclear facility, provided that the work is encompassed within the existing authorization agreement or requires no substantial changes to the associated safety basis.

Unplanned Shutdown Directed by DOE Management Official

Self explanatory

Extended Shutdown

When program work in a nuclear facility is stopped for a longer period than that specified in Table A-1, this scenario applies. The following situations would be examples of extended shutdowns:

1. Program work in a Hazard Category 2 nuclear facility is stopped for more than one year (regardless of whether maintenance and upkeep have continued) and similar program work has not been performed in another nuclear facility using similar equipment, personnel, and procedures within a year

2. A fuel receiving and storage facility has stored fuel continuously for the past 15 years, but has not received fuel for five years and fuel has not been received using similar procedures, equipment, and personnel in another nuclear facility within a year. The next fuel receipt in either facility would be a restart after an extended shutdown.

The following kinds of situations would NOT qualify as an extended shutdown:

1. A nuclear facility has duplicate systems, one of which is used as backup to the other. One system has been in operation for more than a year, but is now in need of repair. A formal ORR or RA would not be needed to transfer to the backup system

2. A fuel receiving and storage facility has been conducting routine fuel movements continuously. A special tool for handling one type of fuel has not been used for more than a year. An ORR or RA would not be needed before resuming use of the tool

3. The High-Level Waste Tank Farm has been transferring liquid wastes continuously. A particular valve box has not been used for more than a year. An ORR or RA would not be needed to transfer waste through the valve box.

Substantial Process, System, or Facility Modification

This scenario applies when program work has ceased for substantial modifications (to the structure, equipment, process or utility systems, safety systems, or process parameters) that cause the facility's safety basis documentation (SAR, technical standards, etc.) to be modified significantly, except as explained below. Examples of situations that would fit this scenario

include the following:

1. Restart after substantial equipment or process changes that either (1) add a new accident scenario to those analyzed in the SAR, or (2) provide new pathways by which an analyzed accident could occur.

The following types of situations would NOT fit this scenario:

1. Purely editorial changes to the SAR, Technical Safety Requirements (TSRs), or Technical Specifications (TSs)
2. Essentially like-for-like changes of equipment
3. Administrative changes that require a change to the SAR, TSRs, or TSs (for example, when ownership of a facility is transferred to a new department).

Shutdown Caused by Operations Outside Safety Basis

The following kinds of situations would fall under this scenario:

1. Violation of a safety limit
2. Simultaneous violation of multiple TSRs.

Routine Shutdowns

For *routine shutdowns* (see def.) that are greater than three months for a Hazard Category 1 nuclear facility or six months for a Hazard Category 2 nuclear facility, agreement for performance of a Readiness Assessment will be reached between the applicable Cognizant Manager and the NE-ID Division Director per note (I), Table A-1.

DOE Official Deeming it Appropriate

Self explanatory

Substantial Modifications Requiring Modifications of Safety Basis (only applicable to Hazard Category 3 nuclear facilities)

This scenario applies when program work has ceased for substantial modifications (to the structure, equipment, process or utility systems, safety systems, or process parameters) that cause the Nuclear Facility's safety basis documentation (SAR, TSs, etc.) to be modified significantly, except as explained below. Examples of situations that would fit this scenario include the following:

1. Restart after substantial equipment or process changes that either (1) add a new accident scenario to those analyzed in the SAR, or (2) provide new pathways by which an analyzed accident could occur.

The following types of situations would NOT fit this scenario:

1. Purely editorial changes to the SAR, TSRs, or TSs
2. Changes to the safety basis documents that are not the result of equipment or process changes
3. Essentially like-for-like changes of equipment
4. Administrative changes that require a change to the SAR, TSRs, or TSs (for example, when ownership of a facility is transferred to a new department).

Example of Resumption

Resumption is the continuation of program work, possibly in a different physical location and/or under a different safety basis. For example:

- Fuel has been received and stored on a continuous basis in CPP-666. Fuel has been stored in CPP-749. Fuel movements in CPP-749 have not been performed in over a year. Fuel movements in CPP-749 could be considered resumption of program work since CPP-749 has continued to operate (store fuel) and the activity (fuel handling) has been performed within 12 months in CPP-666 using similar personnel, equipment, and procedures.

Situations That Will Not Normally Require an ORR or RA

The following types of situations will NOT normally require an ORR or RA. The examples listed are not intended to be all-inclusive. They are merely intended to illustrate the type of situation being described.

1. Restart after a shutdown that is unrelated to or only coincidentally related to, the operation of a facility. For example:

   - An alarm in one facility causes the shutdown and evacuation of a second Nuclear Facility. In this type of situation, the second facility may be restarted as soon as practical after it is re-occupied

   - Momentary loss of commercial power causes a protective system to trip, leading to the automatic shutdown of a facility or activity/operation, provided that the protective system functioned properly.

2. Restart after a shutdown that is part of the normal operating cycle of a facility or process, provided that none of the other shutdown scenarios applies. For example:

   - The Liquid Effluent Treatment and Disposal (LET&D) facility is operated when its feed tank becomes full, and is shut down when the feed tank has been emptied. In this situation or others of its type, normal operating procedures can be used to restart the process when necessary, provided that none of the other shutdown scenarios applies

   - If a facility or activity normally operates only one shift per day, no review is required to restart the next day. No review is required to restart an activity after weekends or holidays.

3. Restart after a planned shutdown required for regularly scheduled preventive maintenance, routine planned repair, corrective maintenance, or upkeep as long as the shutdown is less than that for extended shutdowns in Table A-1. Facilities and processes shut down for preventive maintenance can be restarted upon acceptance of postmaintenance testing

4. Maintenance or construction work within a nuclear facility. However, even though no review is normally required prior to maintenance or construction, many situations will require a review after maintenance or construction before program work can be resumed

5. Other situations, as described under specific shutdown scenarios above.

Appendix B
Activity Description

Activity Title: _____ Date: _____

Organization/Facility: _____

Activity Leader: _____

Provide a detailed description of the activity as it relates to the following points. If it does not apply, provide a brief explanation.

GENERAL

1. Facility and Activity/Operation (as applicable) Hazard Category or Classification
2. Facility and Equipment Age
3. Description of Activity (provide basis if considered resumption)
4. Reason for Activity Shutdown (restarts only)
5. Length of Time Activity Expected to be Shutdown (restarts only).

PROCESS

1. Modifications to Safety Related Structures, Systems, or Components
2. Modifications to Non-Safety Related Structures, Systems, or Components
3. Estimated Project Cost
4. Special Equipment, Tools, Test Equipment, Radioactive Sources, Hazardous Chemicals.

PROGRAM

1. Revised/New Safety Basis Documents (for example, Safety Analysis Reports, Technical Safety Requirements, Operational Safety Requirements)
2. Revised/New Criticality Safety Documents or Limits

3. New or Increased Hazards Identified in the Hazard Analysis
4. Environmental Permits
5. Hazardous Material Inventory Changes
6. Revised/New Facility and Activity/Operation (as applicable) Training Requirements.

Appendix C
Activity Evaluation

Activity Title: _____

Activity Short Description: _____

_____

Activity Leader: _____ _____

Name Date

OSB Members (OSB chairman to specify positions needed: Safety Analysis, Quality Assurance, Radiological Control, Training, etc.)

OSB Member Name	Position

Activity Title: _____

Activity Leader: _____

INSTRUCTIONS:

1. Evaluate each criterion and provide a basis for the result.

2. When a "Yes" answer is reached, check the appropriate box following criterion 13; no further evaluation is required.

3. Provide justification for any proposed deviation from the Table A-1 Independent Readiness Review level (either increase or decrease) in the "Comments" section.

4. Submit results of this evaluation as part of a Startup Notification Report unless criterion 1 through 12 are evaluated as "No" or "N/A" and criterion 13 is evaluated as "Yes" (ORR/RA is not required).

#	Evaluation Criteria	Yes, No, N/A	Table A-1 Independent Readiness Review
1.	Is this a restart of a facility after an unplanned shutdown directed by a DOE management official for safety or other appropriate reasons? Basis: _____		ORR

#	Evaluation Criteria	Yes, No, N/A	Table A-1 Independent Readiness Review
2.	Is this a restart after a facility shutdown because of operations outside the safety basis? Basis: _____ _____ _____ _____ _____		ORR
3.	Is this a New Facility? Examples include: • Initial startup of a new Hazard Category 1, 2, or 3 facility • Initial startup of a completely new process in an existing facility that will result in a substantial change to the safety basis Basis: _____ _____ _____ _____		ORR
4.	Is this a restart of a Hazard Category 1 nuclear facility or restart of an activity/operation not performed in this or a similar facility after an extended shutdown (>6 months)?		ORR

#	Evaluation Criteria	Yes, No, N/A	Table A-1 Independent Readiness Review
	Basis: _____		
5.	Is this a restart of a Hazard Category 2 nuclear facility or restart of an activity/operation not performed in this or a similar facility after an extended shutdown (>12 months)? Basis: _____		ORR
6.	Is this a restart of a Hazard Category 1 or 2 nuclear facility after substantial process, system or facility modifications. (Note: The restart authority must determine if the modifications are substantial based on the impact of changes on the safety basis and the extent and complexity of changes; this would not necessarily be determined by the Unreviewed Safety Question [USQ] process.) Basis: _____		ORR

#	Evaluation Criteria	Yes, No, N/A	Table A-1 Independent Readiness Review
	_____ _____		
7.	Is this a restart of Hazard Category 3 nuclear facility or restart of an activity/operation not performed in this or a similar facility after an extended shutdown (>12 months)? Basis: _____ _____ _____ _____ _____		RA
8.	Is this a restart of a Hazard Category 3 nuclear facility after substantial modifications requiring modification to the safety basis? (Substantial modifications are based on extent and complexity of changes, as determined by the approval authority.) Basis: _____ _____ _____ _____ _____		RA

#	Evaluation Criteria	Yes, No, N/A	Table A-1 Independent Readiness Review
9.	Is this a restart of a Hazard Category 1 nuclear facility or restart of an activity/operation not performed in this facility after a routine shutdown of more than 3 months AND not performed in a similar facility within 6 months (not a resumption)? Basis: _____		RA
10.	Is this a restart of a Hazard Category 2 nuclear facility or restart of an activity/operation not performed in this facility after a routine shutdown of more than 6 months AND not performed in a similar facility within 12 months (not a resumption)? Basis: _____		RA

#	Evaluation Criteria	Yes, No, N/A	Table A-1 Independent Readiness Review
11.	Is the activity/operation a resumption of program work in a Hazard Category 1, 2 or 3 nuclear facility in which the work will be performed for the first time under the affected facility safety basis? Basis: _____		RA **NOTE:** *MSA allowed vice an independent review if approved by SNR*
12.	Is the activity/operation a resumption of program work in which the activity/operation has not been performed in this facility within the extended shutdown limits of Table A-1, but has been performed in a similar facility within 6 months for a Hazard Category 1 nuclear facility and 12 months for a Hazard Category 2 and 3? Basis: _____		RA **NOTE:** *MSA allowed vice an independent review if approved by SNR*

#	Evaluation Criteria	Yes, No, N/A	Table A-1 Independent Readiness Review
	_____		
13.	Is the activity/operation a restart or resumption of program work in which the activity/operation has been performed in this facility within 3 months for a Hazard Category 1 nuclear facility and 6 months for a Hazard Category 2 and 3? Basis: _____ _____ _____ _____ _____		ORR or RA Not Required

Level of Independent Readiness Review Required by Table A-1:

- ☐ Operational Readiness Review
- ☐ Readiness Assessment
- ☐ ORR or RA not required

Proposed Level of Independent Readiness Review:

- ☐ Operational Readiness Review
- ☐ Readiness Assessment
- ☐ ORR or RA not required

COMMENTS: _____

Submitted: _____ Date: _____

Activity Leader

Concurred: _____ Date: _____

Nuclear Facility Manager

Concurred: _____ Date: _____

OSB Chairperson

Approved: _____ Date: _____

Cognizant Manager

Appendix D
ORR Exemption Request

The information below is required to be provided to request an exemption from DOE O 425.1C Operational Readiness Review requirements. Requests for exemptions should address the following information, as appropriate (see DOE M 251.1-1A, Chapter VII):

1. Facility/activity for which an exemption is being requested

2. Reference to the specific requirement(s) of DOE O 425.1C for which the exemption is sought

3. Identification and justification of the acceptance of any additional risks that will be incurred if the exemption is granted

4. Benefits to be realized by providing the exemption

5. Indication of whether or not the exemption being requested is temporary or permanent, and for temporary exemptions, indication of when compliance will be achieved.

6. Identification of any other pertinent data or information used as a basis for obtaining an exemption

7. Requests for exemptions to environment, safety, and health requirements shall also address the following:

    a. A description of any special circumstances that warrant the granting of an exemption, including whether –

        1. application of the requirement in the particular circumstances would conflict with another requirement;

        2. application of the requirement in the particular circumstances would not achieve, or is not necessary to achieve, the underlying purpose of the requirement;

3. application of the requirement in the particular circumstances would not be justified by any safety and health benefit;

4. the exemption would result in a health and safety benefit that compensates for any detriment that would result from granting the exemption; or

5. there exists any other material circumstances not considered when the requirement was adopted for which it is in the public interest to grant an exemption.

b. Steps to be taken to provide adequate protection of health, safety, and the environment, and a statement that adequate protection will be provided

c. A description of any alternative or mitigating actions that have or will be taken to ensure adequate safety and health and protection of the public, the workers, and the environment for the period the exemption will be effective. Examples include:

1. The process to confirm readiness to safely start the activities including methods of review to verify readiness of personnel, procedures, and SSCs (for example, LWP-9903, "Performing Management Self-Assessments for Readiness")

2. The compensatory measures such as continual supervisory presence during the activity.

Appendix E
Procedure Basis

Step	Basis	Source	Citation
Appendix A and Appendix C	Contractor management shall determine if Operational Readiness Reviews are required for startup of new nuclear facilities or restart of a nuclear facility.	DOE O 425.1C	CRD 2.a.(1)
Appendix A and Appendix C	For restarts of nuclear facilities not requiring an Operational Readiness Review, contractor management shall evaluate the need for performing a Readiness Assessment prior to restart.	DOE O 425.1C	CRD 2.a.(2)
Appendix A	For nuclear facility startup or restart actions, the contractor shall determine the authorization authority for startup or restart approval.	DOE O 425.1C	CRD 2.a.(3)
Subsection 4.2	The contractor procedure must provide for Startup Notification Reports that meet requirements for content and periodicity.	DOE O 425.1C	CRD 2.a.(4)

Step	Basis	Source	Citation
Subsections 4.2, 4.3	For Operational Readiness Reviews, contractors must prepare startup/restart notification reports, plans of action, implementation plans, and final reports. The contractor's line management must prepare the plan of action. The contractor's Operational Readiness Review team leaders must prepare implementation plans and final reports.	DOE O 425.1C	CRD 2.b.(1)
Steps 4.1.4, 4.3.13, 4.3.16, and Section 5	The resolution of all findings from the Operational Readiness Review shall be documented and maintained with the plan of action, Implementation Report, and final report.	DOE O 425.1C	CRD 2.b.(1)
Step 4.3.2	The contractor shall develop the breadth of the Operational Readiness Review and document it in the plan of action. A minimum set of core requirements shall be addressed when developing the breadth of the Operational Readiness Review.	DOE O 425.1C	CRD 2.b.(2)
Step 4.3.3	The contractor's Operational Readiness Review plan of action must be approved by the appropriate startup or restart authorities.	DOE O 425.1C	CRD 2.b.(3)

Step	Basis	Source	Citation
Step 4.3.3	The contractor's Operational Readiness Review plan of action must be provided to EH-2 for review and comment.	DOE O 425.1C	CRD 2.b.(3)
Steps 4.3.1 and 4.3.5	Contractor management must appoint Operational Readiness Review teams meeting specified requirements.	DOE O 425.1C	CRD 2.b.(4)(a)
Steps 4.3.1 and 4.3.5	The Operational Readiness Review team must not include as senior members (including team leader) individuals from offices assigned direct line management responsibility for the work being reviewed (any exceptions require approval of the startup or restart authority), or individuals for which they are directly responsible.	DOE O 425.1C	CRD 2.b.(4)(b)
Steps 4.3.5 and 4.3.10	The Operational Readiness Review team leader shall determine and document qualifications of Operational Readiness Review team members.	DOE O 425.1C	CRD 2.b.(4)(c)

Step	Basis	Source	Citation
Step 4.3.6	The contractor's Operational Readiness Review team shall determine the criteria and review approaches to be used for the review based on the approved breadth given in the plan of action and document the criteria and review approaches in the Operational Readiness Review Implementation Plan.	DOE O 425.1C	CRD 2.b.(5)
Steps 4.3.7 and 4.3.9	The contractor's Operational Readiness Review team leader shall approve the Implementation Plan and use it to conduct the Operational Readiness Review.	DOE O 425.1C	CRD 2.b.(6)
Step 4.3.7	The Implementation Plan shall be provided to EH-2 for review and comment.	DOE O 425.1C	CRD 2.b.(6)
Step 4.3.8	The contractor's line management must certify that all prerequisites specified in the plan of action have been met prior to starting the independent readiness review (a manageable list of open items may exist).	DOE O 425.1C	CRD 2.b.(7)

Step	Basis	Source	Citation
Step 4.3.15	The responsible contractor must certify by correspondence to DOE line management that the facility is ready to startup or restart and that this has been verified by the contractor Operational Readiness Review.	DOE O 425.1C	CRD 2.b.(8)
Steps 4.3.10 and 4.3.11	Upon completion of the contractor Operational Readiness Review, DOE line management must ensure a final report is prepared and approved by the Operational Readiness Review team leader.	DOE O 425.1C	CRD 2. b.(9)(a)
Step 4.3.10	The final report shall document the results of the Operational Readiness Review and make a conclusion as to whether startup or restart of the nuclear facility can proceed safely. The final report must meet specified requirements for content.	DOE O 425.1C	CRD 2.b.(9)(a)
Step 4.3.10	Additionally, there must be a "Lessons Learned" section to the Operational Readiness Review final report that may relate to design, construction, operation and decommissioning of similar facilities and to future Operational Readiness Review efforts.	DOE O 425.1C	CRD 2.b.(9)(b)

Step	Basis	Source	Citation
Step 4.3.10	The core requirements, in aggregate, address many of the core functions and guiding principles of an Integrated Safety Management System (ISMS). The final report should include a statement regarding the team leaders assessment of the adequacy of the implementation of those functions and principles already addressed by the Operational Readiness Review at the facility undergoing the review.	DOE O 425.1C	CRD 2.b.(9)(c)
Step 4.3.15	The final report shall be submitted to the startup or restart authority to be used as a basis to grant approval of the startup or restart of the nuclear facility.	DOE O 425.1C	CRD 2.b.(9)
Step 4.3.15	A copy of the Operational Readiness Review final report must be provided by the contractor to its respective field office for transmittal to EH-2 for review and comment.	DOE O 425.1C	CRD 2.b.(10)
Steps 4.3.16	The mechanism for closure of DOE Operational Readiness Review findings must be as specified.	DOE O 425.1C	CRD 2.b.(11)

Step	Basis	Source	Citation
Steps 4.3.18 and 4.3.19	The contractor must satisfactorily resolve all of the DOE Operational Readiness Review prestart findings prior to startup or restart of the facility. The startup or restart authority may approve startup or restart after prestart findings are resolved.	DOE O 425.1C	CRD 2.b.(12)
Entire procedure	The contractor must establish procedures that define when a Readiness Assessment is required and provide requirements for conduct of readiness assessments, including procedures by which the contractor will gain Operations Office approval of the startup or restart of nuclear facilities.	DOE O 425.1C	CRD 2.c.(1)
Subsections 4.2 and 4.4	The procedures shall require submittal of a startup notification report to obtain approval to use a Readiness Assessment and preparation of a formal plan of action that includes as a minimum, the breadth of the assessment, team leader designation, and prerequisites for the assessment and shall be approved by the startup or restart authority.	DOE O 425.1C	CRD 2.c.(1)

Step	Basis	Source	Citation
Appendix A	For shutdowns directed by contractor management, these procedures may indicate that, except for serious safety reasons, the contractor management may be the startup or restart authority.	DOE O 425.1C	CRD 2.c.(1)
Subsection 4.4	Contractor Readiness Assessment procedures must specify a graded approach to the tenets of Operational Readiness requirements specified in this DOE Order. The procedure should indicate that the Readiness Assessment may be as short and simple as a restart procedure, or that it may approach the breadth and depth of an Operational Readiness Review, depending on the causes and duration of the shutdown and the modifications accomplished during the shutdown.	DOE O 425.1C	CRD 2.c.(2)
Step 4.4.16	The startup or restart authority, the Operations Office Manager or designee, may approve startup or restart after Readiness Assessment prestart findings are corrected.	DOE O 425.1C	CRD 2.c.(3)

Step	Basis	Source	Citation
Step 4.3.2	Each of the minimum core requirements listed in the DOE Order must be addressed when developing the breadth of an Operational Readiness Review. Justification shall be provided in the plan of action if it is determined that a particular core requirement will not be reviewed.	DOE O 425.1C	CRD 2.d.
Subsection 4.5	Requirements for exemptions are provided in DOE M 251.1A, "Directives System."	DOE O 425.1C	CRD 2.e.
Step 4.1.4, 4.3.20, 4.4.17 and Section 5	Requirements for maintenance and disposition of Federal records, such as those pertaining to Operational Readiness Reviews or Readiness Assessments, are provided under the general guidance of DOE Order 200.1, "Information Management Program," dated 9-30-96.	DOE O 425.1C	CRD 4.f.