

# DIRECTIVES CONTROL FORM - ORO O FINAL DIRECTIVE

## PART A (To be completed by the Division of Primary Interest (DPI))

1. **NUMBER AND TITLE OF DIRECTIVE:** ORO O 420, Chapter IX, Chg. 2, STARTUP AND RESTART OF NUCLEAR FACILITIES
2. **PURPOSE OF TRANSMITTAL:**  New Directive  Revised Directive  Page Change
3. **THIS DOCUMENT MAY AFFECT THE WORK PERFORMED BY THE FOLLOWING CONTRACTORS:** (Check appropriate boxes)
- No (all contractors) Although the CRD attached to the correlating DOE Order is applicable to contractors, no additional contractor requirements are imposed in this Chapter.
- Yes If yes, whom?  LMES  LMER  ORAU  SURA  
 Bechtel Jacobs Company
- Other contractors (list by type)

*Many ORO contractors have approved S/RIDs or WSS sets that may affect applicability of contractor requirements from this directive. Applicability of contractor requirements must take into account the approved standards set for each particular contract.*

4. **SIGNIFICANT PROVISIONS:** Are there any significant changes or impact?  
 No  Yes If yes, describe: This ORO Chapter is part of the ORO sunset review process. Changes to this Chapter include minor editorial revisions to indicate the current correlating DOE Order (DOE O 425.1A) and to update the DOE Directives referenced in paragraph 6. To reflect current policy, subparagraphs 4a(3) and 4b(3) have been added and clarifying language has been added in subparagraphs 4e(5), 4f(4) and 5c(15). To address Federal responsibilities for flow-down of pass-through requirements, additional language has been added in subparagraphs 4c(2) & (3), 4d(1), 4e(3), 4f(2), 5a(1) & (2), 5b, 5c and 5d.
5. **CONTACT POINT:** Tyrone Harris Nuclear Safety Division, SE-33 576-0953  
Name Organization Telephone

## PART B (To be completed by the Directives Management Group (DMG)):

6. **FILING INSTRUCTIONS:**
- | <u>Remove</u>   | <u>Dated</u> | <u>Insert</u>   | <u>Dated</u>             |
|---|--------------|---|--------------------------|
| ORO O 420, Chapter IX,<br>Chg. 1, Pages IX-1 through IX-8 | 03/31/1998   | ORO O Control Form<br>ORO O 420, Chapter IX,<br>Chg. 2, Pages IX-1 through IX-9 | 04/30/1999<br>04/30/1999 |

*ORO Orders are available on the ORO Directives Management Home Page [http://www.ornl.gov/doe\_oro\_dmg/orchklst.htm] within 5-10 working days after receipt of this Control Form. The ORO Orders will no longer be mailed in printed copy unless you do not have Internet capabilities.*

7. **APPROVED FOR DISTRIBUTION IN ACCORDANCE WITH THE OFFICIAL DIRECTIVES DISTRIBUTION LIST:**

Original signed by Jennifer H. Cusick, AD-440 04/30/1999  
Signature Management Analyst, AD-440 Date

**INSTRUCTIONS TO ADDRESSEES: THIS FORM IS TO BE FILED WITH THE DIRECTIVE AND RETAINED**  
Rev. 08/04/1998

# U.S. Department of Energy

Oak Ridge Operations

ORO O 420 Chapter IX Change 2
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**DATE: 04/30/1999**

**SUBJECT: STARTUP AND RESTART OF NUCLEAR FACILITIES**

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1. PURPOSE. This Chapter correlates to DOE O 425.1A, STARTUP AND RESTART OF NUCLEAR FACILITIES, dated December 28, 1998, by assigning responsibility and accountability and providing administrative and/or contractual guidance to Oak Ridge Operations (ORO) and its contractors. Nothing in this issuance changes any requirements contained in any DOE Order.
2. CANCELLATION. This Chapter cancels and replaces ORO O 420, Chapter IX, Chg. 1, STARTUP AND RESTART OF NUCLEAR FACILITIES, dated March 31, 1998.
3. APPLICABILITY. The provisions of this Chapter apply to ORO Principal Staff. Although the Contractor Requirements Document (CRD) attached to DOE O 425.1A is applicable to contractors to the extent set forth in their contract, no additional contractor requirements are imposed in this ORO Order.
4. RESPONSIBILITIES. Many ORO contractors have developed Standards/Requirements Identification Documents (S/RIDs) or Work Smart Standards (WSS) sets that may not include requirements referenced or included in DOE O 425.1A, its attached CRD, or this Chapter. Interpretation and performance of Federal responsibilities outlined below must take into account the approved standards set for each particular contract and must not be deemed to add any requirements to the approved set.
  - a. Manager/Deputy Manager.
    - (1) As indicated on Table 1 (Attachment 1 of this Chapter) and supplemental memorandums of delegation, serves as the Startup/Restart Approval Authority. The Manager may delegate this responsibility to an Assistant Manager, a Contracting Officer's Representative (COR), another DOE official, and, for Readiness Assessments (RAs), to the contractor.
    - (2) As delineated in DOE M 251.1-1A, approves exemptions from applicable provisions of DOE O 425.1A.
    - (3) As startup/restart approval authority, approves contractor and DOE plans-of-actions.
  - b. Assistant Managers.
    - (1) Verify to the Manager that the contractors' preparations for startup or restart are completed, ORO is ready to oversee operations, and the facility is ready for the DOE Operational Readiness Review (ORR).
    - (2) As designated by the Manager, serve as the Startup/Restart Approval Authority.

- (3) As startup/restart approval authority, designated by the manager, approves contractor and DOE plans-of-actions.
- c. Director, Technical Support Division.
- (1) Provides support to CORs in implementation of RAs and ORRs.
  - (2) Ensures that ORO nuclear facility startup or restart procedures conform to the requirements of DOE O 425.1A, and that modifications needed to conform to approved alternate contractual requirements will provide for adequate safety.
  - (3) Advises CORs on the adequacy of proposed contractual requirements relating to startup and restart.
- d. DOE Line Management/Contracting Officer's Representatives.
- (1) Perform those tasks identified in DOE O 425.1A, subparagraphs 5a(1)-(4). Where contractors use S/RIDs or WSS sets to identify safety requirements, ensure that provisions relating to startup and restart of nuclear facilities are sufficient to ensure adequate safety.
  - (2) For a DOE ORR and RA, appoints a Responsible Individual (RI) to coordinate the preparation of the plan-of-action and selection of the team leader.
- e. Operational Readiness Review/Readiness Assessment Team Leader.
- (1) Coordinates the selection of the ORR or RA team members.
  - (2) Prepares and approves the ORR or RA implementation plan.
  - (3) Plans, directs, and performs the ORR or RA in accordance with DOE-STD-3006-95 and DOE-HDBK-3012-96, or applicable alternative requirements included in the approved contractual requirements set.
  - (4) Prepares the ORR or RA Report.
  - (5) As directed by the Startup/Restart Approval Authority, verifies the closure of pre-start findings.
- f. Operational Readiness Review/Readiness Assessment Team Members.
- (1) Assist in preparation of the implementation plan.
  - (2) Conduct the review in accordance with DOE O 425.1A and DOE-STD-3006-95, or applicable alternative requirements included in the approved contractual requirements set.

- (3) Assist in preparing the ORR/RA final report.
  - (4) As directed, assist in the verification of the closure of pre-start findings.
- g. ORO Staff, as assigned, conduct an ORR and RA in accordance with the provisions of DOE O 425.1A, DOE-STD-3006-95 and this Chapter.

## 5. REQUIREMENTS AND PROCEDURES.

### a. ORR and RA - General.

- (1) Cognizant DOE line management may request an ORR or a RA at any time for any activity or operation. Contractors, with DOE line management concurrence, use established contractual standards or DOE 5480.23, DOE-STD-1027-92, DOE-EM-STD-5502-94, and Table 1 (Attachment 1 of this Chapter) to determine which Category 1, 2, and 3 startups or restarts will require an ORR or RA.
- (2) On a quarterly basis, the contractor develops and transmits to the cognizant COR a "Startup Notification Report," as defined in DOE-STD-3006-95, or provides alternative notification if specified in the approved set of contractual requirements.
- (3) When the scope of an ORR or RA extends over more than one COR area of responsibility, the COR involved will appoint one COR to act as the cognizant COR and DOE primary point of contact. The appointed COR will notify the contractor of his/her selection.
- (4) Using Table 1 and supplemental memorandums of delegation, the cognizant COR determines the Startup/Restart Approval Authority. At this time, delegation of the startup/restart approval authority should be considered. Delegation of startup/restart approval authority will be in writing.
- (5) The COR appoints an RI to coordinate the selection of the DOE ORR or RA Review Team Leader with the Principal Staff.

### b. Operational Readiness Review Procedure.

NOTE: this procedure assumes that the approved contractor set of requirements includes provisions for development of plans-of-actions, implementation plans, corrective action plans, and the conduct of ORR reviews in accordance with the requirements contained in DOE O 425.1A. The procedure must be modified as needed to accommodate the specific approved set of requirements in the contract. Any modification must be noted in the ORO plan-of-action.

- (1) The contractor's Cognizant Individual (CI) and the RI coordinate the development of the plans-of-action.

- (2) The RI assures the review of the contractor and DOE plans-of-action by the Assistant Secretary of Environment, Safety, and Health (EH-1). After comments are resolved, the RI forwards the plans to the Startup/Restart Approval Authority.
- (3) Based on the draft plans-of-action, the ORR Review Team Leader coordinates the selection of the team members.
- (4) The plans-of-actions are approved by the Approval Authority and returned to the respective team leaders.
- (5) DOE line management continues oversight of contractor preparations for startup/restart and oversight of the operation or activity when started.
- (6) Using the approved plans-of-action, the contractor and DOE ORR teams develop implementation plans, which are submitted to the respective team leader for approval.
- (7) The DOE and contractor ORR Team Leader send the approved implementation plan to EH-1 and the RI for review and comment.
- (8) Contractor line management completes all of the ORR prerequisites listed in the contractor's approved plans-of-action and declares their readiness to start/restart the activity or operation.
- (9) The contractor ORR team performs their ORR. The contractor line management develops corrective actions plan for all findings.
- (10) Prerequisites for the commencement of the DOE ORR are provided in DOE O 425.1A, paragraphs 4b(7)(a) and (b).
- (11) The DOE ORR team conducts its independent ORR and writes a final report, which is sent to the Approval Authority, with a copy to the RI and EH-1 for review and comment. EH-1 will provide comments on the recommendations and concerns directly to the Startup/Restart Approval Authority.
- (12) The RI, through the COR, transmits the DOE ORR Final Report to the contractor.
- (13) The contractor develops a corrective actions plan and schedule for the findings from the DOE ORR and transmits them to the RI.
- (14) The cognizant COR approves the corrective actions plan. For ORRs involving work at one or more COR facilities, the appointed COR will include the other CORs in the review and concurrence of the corrective actions plan.

- (15) The contractor documents the completion of all corrective actions from the DOE ORR and notifies the RI.
- (16) The Startup/Restart Approval Authority designates the DOE organization that will verify the closure of the findings from the DOE ORR.
- (17) The closure of the findings are verified by the appointed DOE organization and reported to the Approval Authority.
- (18) The Startup/Restart Approval Authority reviews the ORR Final Reports, closure verification, and DOE line management's assessment of preparedness and determines if the activity or operation will be authorized to startup or restart.

c. Readiness Assessment Procedure.

NOTE: this procedure assumes that the approved contractor set of requirements includes provisions for conduct of RAs in accordance with the requirements contained in DOE O 425.1A. The procedure must be modified as needed to accommodate the specific approved set of requirements in the contract. Any modification must be noted in a memo for the record prepared by ORO.

- (1) ORO employs a two-step readiness assessment process to ensure that Category 1, 2, and 3 nuclear facilities, activities, or operations are ready to start/restart.
  - (a) Contractor line management declares their readiness to startup/restart;
  - (b) Contractor performs an independent RA and develops and completes corrective actions for pre-start findings and a schedule for post-start findings.
- (2) Based on the criteria below, DOE line management may determine that additional RA effort beyond the two-step process should be expended to ensure the safe and reliable startup/restart of nuclear facilities.
  - (a) The relative importance to safety, safeguards, and security;
  - (b) The magnitude of any hazard involved;
  - (c) The life cycle stage of a facility;
  - (d) The programmatic mission of a facility;
  - (e) The particular characteristics of a facility;
  - (f) The cause and circumstances of the facility shutdown; and,
  - (g) Any other relevant factor.

- (3) If DOE line management determines additional RA effort is prudent, two steps are added to the basic two-step process:
  - (a) DOE line management certifies their contractor's readiness and their readiness to oversee; and,
  - (b) ORO performs an independent DOE RA.
- (4) DOE readiness assessments, if performed, are accomplished as outlined below using DOE-STD-3006-95 for guidance.
- (5) The contractor's CI develops a plan-of-action. The minimum core requirements for ORRs defined in DOE O 425.1A will be considered. The CI coordinates the appointment of the RA team leader.
- (6) The RA Review Team Leader coordinates the selection of the team members.
- (7) The CI submits the plan-of-action, through appropriate channels, to the Startup/ Restart Approval Authority for approval.
- (8) Based on the plan-of-action, the contractor Team Leader, with assistance from the team members, prepare their implementation plan.
- (9) The RA Team Leader approves the implementation plan and provides a copy to the Startup/Restart Approval Authority, the team members, the local Headquarters ES&H Representative, and others as directed by the Approval Authority.
- (10) The contractor line management completes prerequisites for facility or operation startup/restart and notifies the CI of readiness to proceed.
- (11) The CI notifies the contractor RA Team Leader to proceed with the RA.
- (12) The contractor team performs the RA in accordance with the approved RA implementation plan.
- (13) The contractor RA team prepares a readiness assessment report, which includes a recommendation for startup/restart of the activity or facility and sends it to the CI.
- (14) Contractor line management develops a corrective actions plan for any findings. The contractor RA team verifies the completion and adequacy of the correction actions taken to resolve the pre-start findings.
- (15) Once any pre-start corrective actions are complete and verified as effective, contractor line management transmits their readiness to proceed (RTP) letter to the cognizant COR.

- (16) The cognizant COR forwards the contractor's RTP memo, and his/her concurrence, to the Startup/Restart Approval Authority.

d. DOE Readiness Assessment Procedure.

NOTE: this procedure assumes that the approved contractor set of requirements includes provisions for development of a corrective actions plan in accordance with the requirements contained in DOE O 425.1A. The procedure must be modified as needed to accommodate the specific approved set of requirements in the contract. Any modification must be noted in the ORO implementation plan.

- (1) If an independent DOE RA is to be performed, the COR when ready certifies DOE line management's readiness to proceed and the RI notifies the DOE RA Team Leader to proceed with the DOE RA.
- (2) The DOE RA team performs the RA in accordance with their approved implementation plan.
- (3) The DOE RA team prepares a final RA report, which contains a recommendation for startup or restart.
- (4) The DOE RA team leader sends the final DOE RA report to the Approval Authority with a copy to the RI. The RI transmits the report to the contractor, directing development of a corrective actions plan for any findings. If there are findings against DOE line organizations, the RI coordinates development of a corrective actions plan for those findings.
- (5) The contractor develops a corrective actions plan and schedule for the findings from the DOE RA and transmits it to the COR. If required, the DOE corrective actions plan is forwarded to the Startup/Restart Approval Authority for approval.
- (6) The cognizant COR approves the contractor corrective action plan. The contractor documents the completion of all pre-start findings from the DOE RA and notifies the RI.
- (7) If requested by the Approval Authority, the DOE RA Team Leader verifies the completion of the corrective actions for all pre-start findings. Verification of completion of pre-start findings is sent to the Approval Authority.

e. Startup/Restart Approval.

The Startup/Restart Approval Authority reviews the contractor's documentation and, if performed, DOE's documentation of readiness and authorizes startup or restart.

6. REFERENCES.

- a. DOE M 251.1-1A, DIRECTIVES SYSTEM MANUAL, dated January 30, 1998.
- b. DOE-STD-3006-95, PLANNING AND CONDUCT OF OPERATIONAL READINESS REVIEWS (ORR), dated November 1995.
- c. DOE-HDBK-3012-96, GUIDE TO GOOD PRACTICES FOR OPERATIONAL READINESS REVIEWS (ORR), TEAM LEADER'S GUIDE, dated June 1996.
- d. DOE 5480.23, NUCLEAR SAFETY ANALYSIS REPORTS, dated April 10, 1992.
- e. DOE-STD-1027-92, HAZARD CATEGORIZATION AND ACCIDENT ANALYSIS TECHNIQUES FOR COMPLIANCE WITH DOE 5480.23, NUCLEAR SAFETY ANALYSIS REPORTS, dated December 1992.
- f. DOE-EM-STD-5502-94, HAZARD BASELINE DOCUMENTATION, dated August 1994.

7. DEFINITIONS.

- a. Cognizant Individual. The contractor line individual responsible for coordinating the performance of the contractor ORR or RA.
- b. Responsible Individual. The DOE line individual, appointed by the cognizant COR, responsible for coordinating the performance of the DOE ORR or RA.

8. CONTRACTOR REQUIREMENTS DOCUMENT. None.

9. ATTACHMENTS.

Attachment 1 - Table 1, "Start Up/Restart Requirements Summary."

**START/RESTART REQUIREMENTS SUMMARY**

Hazard Category of Facility being Started Basis for Shutdown	NUCLEAR Category 1	Approval Authority	S-1 (A)	Shutdown Official (C)	SO *6 Months	SO	Approval Authority (B)	Ops Office Mgr (A)	Contractor Management Directed, Unplanned Shutdown
		Review Type	ORR	ORR	ORR	ORR	ORR	RA	
Hazard Category of Facility being Started Basis for Shutdown	NUCLEAR Category 2	Approval Authority	S-1 (A)	Shutdown Official (C)	SO (A) *12 Months	SO (A)	Approval Authority (B)	Ops Office Mgr (A)	Unplanned Shutdown due to automatic actuation or failure of safety equipment or initiated by an operator due to an abnormal condition
		Review Type	ORR	ORR	ORR	ORR	ORR	RA	
Hazard Category of Facility being Started Basis for Shutdown	NUCLEAR Category 3	Approval Authority	SO (A)	Shutdown Official (C)	Ops Office Mgr (A) *12 Months	Ops Office Mgr (A)	Approval Authority (B)	Ops Office Mgr (A)	Shutdown Caused by Operations Outside the Safety Basis
		Review Type	ORR	ORR	ORR	RA	ORR	RA	
Hazard Category of Facility being Started Basis for Shutdown									Facility Modifications Requiring Modifications in Safety Basis
Hazard Category of Facility being Started Basis for Shutdown									* Extended Shutdown
Hazard Category of Facility being Started Basis for Shutdown									DOE Management Directed, Unplanned Shutdown
Hazard Category of Facility being Started Basis for Shutdown									New Facility

(A) or Designee by indicated DOE Official.  
 (B) Official Designated to approve safety basis which was violated.  
 (C) Secretarial Officer (SO) may designate other Approval Authority based on specific circumstances.