



# U.S. Department of Energy

Oak Ridge Operations

ORO O 420  
Chapter IX

DATE: 9-30-96

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

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1. PURPOSE. This Chapter correlates to DOE O 425.1, STARTUP AND RESTART OF NUCLEAR FACILITIES, dated September 29, 1995, by assigning responsibility and accountability and providing administrative and/or contractual guidance to Oak Ridge Operations (ORO) and those contractors identified in paragraph 3 below. Nothing in this issuance changes any requirements contained in any DOE Order.
2. CANCELLATION. ORIG N 5480.31B, STARTUP AND RESTART OF NUCLEAR FACILITIES, dated March 22, 1995.
3. APPLICABILITY. The provisions of this Chapter apply to ORO Principal Staff, management and operating (M&O) contractors, and other contractors providing support to or involved with the operational readiness review (ORR) or readiness assessment (RA) processes.
4. RESPONSIBILITIES.
  - 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 Officers' Representative (COR), another DOE official, and for RAs to the contractor.
    - (2) As delineated in DOE M 251.1-1, approves exemptions from performing an ORR and RA.
  - 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 ORR.
    - (2) As designated by the Manager, serve as the Startup/Restart Approval Authority.
  - 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 425.1.
  - d. Contracting Officers' Representatives.
    - (1) Perform those tasks identified in DOE O 425.1, subparagraphs 5a(1)-(4).

- (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-3012-94.
  - (4) Prepares the ORR or RA Report.
  - (5) As directed by the Startup/Restart Approval Authority, verifies the closure of 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 425.1 and DOE-STD-3006-95.
  - (3) Assist in preparing the ORR/RA final report.
  - (4) As directed, assist in the verification of the closure of findings.
- g. ORO Staff, as assigned, conduct an ORR and RA in accordance with the provisions of DOE O 425.1, 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. M&O contractors, with DOE line management concurrence, use DOE O 421.3 (formerly 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 M&O contractor develops and transmits to the cognizant COR a "Startup Notification Report," as defined in DOE-STD-3006-95.
  - (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 shall notify the M&O 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 shall 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.

- (1) The M&O contractor's Cognizant Individual (CI) and the RI coordinate the development of the plans-of-action.
- (2) The RI assures the review of the M&O 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 425.1, 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 shall include the other CORs in the review and concurrence of the corrective actions plan.
- (15) The M&O 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.

- (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 in the same manner as contractor RA 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 425.1 shall 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 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 RA Procedure.

- (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 251.1-1, Change 1, NEW DIRECTIVES SYSTEM MANUAL, dated December 12, 1995.

- b. DOE-STD-3006-95, PLANNING AND CONDUCT OF OPERATIONAL READINESS REVIEWS (ORR), dated November 1995.
- c. DOE-HDBK-3012-94, TEAM LEADER'S PREPARATION GUIDE FOR OPERATIONAL READINESS REVIEWS, dated September 1994.
- d. DOE O 421.3 (formerly 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. Although DOE O 425.1 is applicable to contractors, no additional requirements are imposed in this new ORO Order.

9. ATTACHMENTS.

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

START/RESTART REQUIREMENTS SUMMARY

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

(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.