



Changes to DOE Order 425.1D and Expectations for Implementation

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Objectives

- Obtain feedback and/or address issues or concerns
- Understand the history of the Readiness Review process
- Understand the rationale for changes in DOE O 425.1
- Understand the major differences between DOE O 425.1C and 425.1D
- Understand the conditions requiring a Readiness Review (RR)
- Understand the expectations and attributes for the DOE and Contractor implementing processes and associated procedures



History of the Readiness Review Process

- DNFSB Recommendation 92-6
- DOE O 5480.31 developed prior to Nuclear Safety Rules
- Two independent reviews (contractor and DOE) required due to limited confidence in contractors and immature nuclear safety infrastructure
- 10 CFR 830 expanded definition of term Nuclear Facility to include Activities & Operations resulting in confusion on when reviews were required and level of review



Purpose of Readiness Review in DOE

- Confirm readiness of facility and personnel to start (or restart) a Hazard Category (HC) 1, 2 or 3 facility, activity or operation within the bounds of:
 - Approved Safety Basis/Authorization Agreement
 - Applicable ES&H requirements
- Confirm that adequate Safety Management Programs have been implemented and sufficient controls are in place to start/restart operations within those bounds.



A Readiness Review should be...

- A disciplined, systematic, documented, examination of facilities and equipment, personnel, procedures, and management control systems to verify that a facility can be operated safely within its approved safety basis.
- Readiness Reviews are **NOT** intended to be tools of line management to **ACHIEVE** readiness. Rather, the readiness reviews provide an **INDEPENDENT CONFIRMATION** of readiness to start or restart operations.



Why the Changes Needed?

- Readiness Reviews were not always conducted when appropriate
- Readiness Reviews were being conducted when not appropriate
- Inconsistencies from site to site in level of Readiness Review for similar activities
- Lack of uniformity in Startup Notification Reports
- Wide disparity on what constituted an effective Readiness Assessment
- Lack of clarity in expectations of DOE oversight



Positive Progress

- Improved confidence in contractor formality of nuclear operations based on results of Readiness Reviews
- Significant experience in planning and conducting Readiness Reviews
- Maturity of feedback and improvement programs and processes by both contractors and DOE
- Mature local procedures for achieving and verifying readiness to start nuclear operations at some sites
- Recognition that the majority of Readiness Reviews conducted within mature site infrastructures are appropriately scoped Readiness Assessments



Directives Review Initiative

- S-1 initiative to revise directives based on his principles
- DOE O 425.1D was ready for RevCom when initiative started
- Objectives
 - Promote consistent level of decision-making discipline on DOE and the contractor
 - Ensure related standards effective to assist implementation
 - Allow offices to add additional requirements
 - Do not prevent offices from doing what they think is appropriate



Directives Review Team

- Comprised of HQ, Field, and Contractor Representatives
 - NNSA – Dick Crowe, Bill Pulse (NV)
 - EM – Jim Hutton, Steve Chalk (RL)
 - NE – Ken Kellar, Mike Hicks (ID)
 - SC – Carol Sohn
 - HSS – Mike Hillman
 - Contractor Representatives
 - Nick Regoli (PNNL)
 - Ted Quale (CH2MHill Hanford)



Major Changes from DOE O 425.1C to 425.1D

- DOE & contractors must develop procedures to implement requirements of DOE O 425.1D
- DOE must concur on contractor's procedures
- Documentation forwarded to PSO/CTA/HSS
- STD-3006-2010 is invoked- Exceptions approved by DOE
- STD includes information that should be included in implementing procedures
- Specificity concerning when a Readiness Review is required
- Emphasis on determination of the level of Readiness Review needed



Major Changes from DOE O 425.1C to 425.1D

- Emphasis and specificity concerning content of Startup Notification Report
- Specificity concerning the conduct of Readiness Assessments
- Improved clarification concerning expectations for DOE oversight of the contractor processes and performance



Criteria for Determination of When a Readiness Review is Required

- Readiness Review must be conducted for all startups and restarts of Hazard Category (HC) 1, 2, and 3 Nuclear Facilities , Activities, and Operations unless the following two conditions are met:
 - Restart is a resumption of routine operations after a short interruption as defined in local procedures, and
 - Restart is conducted using contractor approved operating procedures that provide specific direction for operating systems and equipment during normal conditions



Criteria for Determination of When a Readiness Review is Required

- Operational Readiness Review (ORR)
 - Startup of a new facility (not activity or operation) with new DSA/TSRs
 - Startup after conversion of existing facility to a new nuclear mission with new DSA/TSRs
 - Restart after upgrade in hazard categorization
 - Restart after DOE directed shutdown
 - Restart after violation of safety limit
 - When directed
- All others require at least a contractor Readiness Assessment



DOE Readiness Assessment

- Initial Startup of a new HC 1 or 2 activity or operation with a new DSA/TSRs
- Restart after an extended shutdown of a HC 1 or 2 facility, activity or operation
 - HC 1 – 6 months (up to 12 months with PSO approval and CTA concurrence)
 - HC 2 – 12 months
- Startup or Restart of a HC 1 or 2 facility, activity or operation after substantial modification. Local implementing procedures must define “substantial modification”



DOE Readiness Assessment

- Any situation deemed appropriate by DOE line management

Note: Local DOE procedures should describe the criteria used to determine when a DOE RA is to be conducted.



Other Readiness Review Methods?

- **None!**
- If a Readiness Review is needed, minimum RA requirements will be followed
- If Readiness Review is not needed...
 - Use Building/Process/Activity Standard Operational Procedures.



Startup Authorization Authority (SAA)

- Startup of a new facility (not activity or operation) with new DSA/TSRs
 - HC 1 or 2 - Secretary of Energy (or designee)
 - HC 3 facilities - Cognizant Secretarial Officer (CSO) (or designee)
- Startup after conversion to a new nuclear mission with new DSA/TSRs
 - HC 1 or 2 - Secretary of Energy (or designee)
 - HC 3 facilities - Cognizant Secretarial Officer (CSO) (or designee)
- Restart after upgrade in hazard categorization
 - HC 1 or 2 – Secretary of Energy (or designee)
 - HC 3 – CSO or designee



Startup Authorization Authority

(continued)

- Restart after DOE directed shutdown
 - DOE official of level commensurate with official ordering shutdown (unless higher level directed by CSO)
- Restart after violation of a Safety Limit
 - DOE manager of level commensurate with the Approval Authority for the Safety Limit violated
- Startups of newly constructed nuclear activity or operation with new DSA/TSRs
 - HC 1, 2 or 3 – Level commensurate with DSA Approval Authority
- Restart following extended shutdown of facility, activity or operation or following substantial modification
 - HC 1 – CSO
 - HC 2 – CSO or designee



Startup Authorization Authority

(continued)

- Start up or restart of a nuclear facility, activity or operation where DOE determined a Readiness Review is required
 - DOE official of level commensurate with official directing the Readiness Review to be performed
- In all other cases, as specified in the DOE approved Startup Notification Report
 - The SAA may be a senior Contractor Official if so designated in the approved SNR



Startup Notification Reports

- Minimum content established
- Format established in standard
- DOE field element management required to approve contractor SNRs and provide recommendations on startup for which HQ is the SAA
- DOE line forwards SNR to HQ line management and SAA
- HQ line management distributes to HSS and CTA
- Submission frequency quarterly unless otherwise directed by PSO



Readiness Assessment Requirements

- Use graded approach to tenets of ORR requirements
- Plan of Action (POA)
- All Core Requirements evaluated for applicability, justification for exclusion required
- Implementation Plan (IP)
- RA team members must not review work they are responsible for
- Readiness to Proceed Memorandum
- Report with lessons learned



DOE Oversight Requirements

- Review and concur on contractor procedures to implement the Contractor Requirements Document (CRD)
- Ensure contractor submits accurate Startup Notification Reports quarterly
- Ensure POAs adequately define scope and prerequisites
- Evaluate adequacy of qualifications of contractor readiness review team members
- Evaluate the adequacy of the contractor readiness review and report



DOE Oversight Requirements

- Ensure the contractor and DOE have satisfactorily resolved all prestart findings
- Provide endorsement of contractor's Readiness to Proceed Memorandums
- Ensure DOE and contractor have developed and implemented approved corrective action plans for post-start findings

DOE HQ oversee DOE field processes in accordance with DOE O 226.1A



Other Changes

- Clarification that Implementation Plans are to be written by the team, not just the Team Leader
- Core Requirements reorganized into more logical sequence
- If DOE is the SAA, local DOE readiness to oversee nuclear operations will be verified even when formal DOE readiness review is not conducted
- Clarified expectations for Central Technical Authorities and HSS
- Order reformatted to reflect DOE roles and responsibilities in Order, contractor responsibilities in CRD
- Order reformatted for readability and usability



Changes in DOE-STD-3006-2010

- Clarification of existing terms and definitions
- Expanded discussion in timeline sequence of expectations for planning and conducting Operational Readiness Reviews
- Expanded discussion of content and process attributes for implementing procedures
- Reorganized to provide a complete discussion of expectations for planning and conducting Readiness Assessments.
- Expanded sections concerning:
 - Determine the scope and level of readiness review
 - Roles and responsibilities
 - Team member independence
 - Startup Notification Reports
 - Use of Checklist RAs



Readiness Review Core Requirements (CR)

- DOE O 425.1D defines a minimum group of 17 Core Requirements that must be addressed or evaluated in POA and Readiness Review. (3 apply to DOE Readiness Review only)
- The core requirements define the breadth of the Readiness Review.
- Timely, independent reviews that address the requirements in a technically satisfactory manner may be utilized to justify not performing further evaluation of all or part of a core requirement (must be documented).



What's the Process?

- Project Management Plan (Line Management . . . “Line”)
- Define Review -Startup Notification Report (Line)
- Develop a plan to achieve readiness (Line)
- Develop a Readiness Review Plan of Action (POA) (Line)
- Develop an Implementation Plan (IP) (Readiness Review Team)
- Achieve Readiness/Management Self Assessment (Line)
- Readiness to Proceed Memo (Line)
- Conduct the reviews, Readiness Review Report (Readiness Review Team)
- Corrective Action Plan, Finding Resolution (Line)
- SAA authorizes operations/start (Line)



Exemptions and Equivalencies

- May be obtained using
 - DOE Order 251.1-C “Department Directives Program” and
 - DOE Order 410.1 “Central Technical Authority Responsibilities Regarding Nuclear Safety Requirements
- CTA concurrence is required for both Exemptions and Equivalencies for nuclear facilities
- May be appropriate in unique situations
- Compensatory measures
 - Ensure safety;
 - Defined requirements/completion/transition.



Contractor Implementing Procedures

- Contractors must establish procedures to manage startup and restart actions IAW the CRD. These procedures should include: (standard section)
Note: Other approaches than those in the standard must be identified and approved by DOE
 - Description of the process to evaluate the need to perform a RR (4.B)
 - Resumption of routine operations after a short interruption
 - Contractor approved operating procedures



Contractor Implementing Procedures

- Process with adequate attributes to determine level of RR (4.C/D)
- Process for SNR development with adequate detail (5)
- Process to achieve readiness including mapping the Core Requirements to startup preparations (6)
- Clearly defined minimum specified contractor line management roles and responsibilities (7.1)



Contractor Implementing Procedures

- Operational Readiness Review (ORR) process and procedures must be clearly defined (8)
 - Few changes required for currently compliant processes
 - Development of POA, IP, (8.1-8.3)
 - Designation and qualification for Team and team leader (7.5/7.6)
 - Conduct and support for ORR (8.4/8.5)
 - Final report and corrective actions (8.9-8.13)
 - Preparation of RTP Memo (8.6)



Contractor Implementing Procedures

- Readiness Assessment processes and procedures (9). Area of most significant changes through added specificity.
 - POA (9.1); IP (9.2); report (9.9) additional details required and specified.
 - If checklists to be used additional specific requirements must be defined (9.2)
- RA processes require most changes and additions to existing site procedures.
- RA processes should build from results of the process to determine the required level of RR.



Contractor Implementing Procedures

- Other considerations
 - Is the startup or restart Program Work?
 - Evaluate if startup is after a Substantial Modification
 - Consider defining the terms “Weakness” and “Observation.”
 - If Checklist RAs are used, then procedure should include discussion of POA, IP, and final reports as part of the checklist process.
 - If Site uses Authorization Agreements to define authorized activities, consider defining the specific Activities and Operations for each nuclear facility.



DOE/NNSA Implementing Procedures

- Procedures required at site; PSO; HSS
- Procedures must define three separate roles:
 - Oversight of all contractor and DOE readiness processes
 - DOE line activities
 - Conduct of DOE ORR and RA
- All procedures (contractor and DOE) forwarded to PSO/CTA/HSS for information



DOE/NNSA Implementing Procedures--Oversight

- Oversight processes verify proper implementation of each step of the Readiness Review process
 - Determination of level of RR (near real-time)
 - Preparation and submittal of complete SNR
 - Timeliness, scope, prerequisites for POA
 - RA/ORR processes—Qualified team, IP that reflects POA, RR fully meets IP, report results
 - Corrective actions and declaration of readiness



DOE/NNSA Implementing Procedures--Oversight

- Assessment of adequacy of overall readiness activity (Contractor and DOE) for each startup including documentation as part of DOE readiness decision process
- Oversight of DOE site compliance with each element of readiness process*
- Evaluation of DOE HQ implementation of readiness processes (HQ/HSS responsibility)

* HQ shared responsibility



DOE/NNSA Implementing Procedures-Line

- Line responsibilities in procedures:
 - Concurrence with contractor procedures; changes
 - Review, comment and approval of SNR; POA; RTP memo; forward for approval as required*
 - Define SAA processes*
 - Support for DOE RR*
- * HQ procedures must reflect these responsibilities



DOE/NNSA Implementing Procedures-Line

- Process to determine if DOE RA needed
- Development of POA for DOE RR
- Resolution of RR findings for which responsible
- Process to verify that contractor's preparations for a startup or restart have been adequately completed.
- Process to achieve and maintain readiness to oversee contractor operations



DOE/NNSA Implementing Procedures-Readiness Reviews

- Site and HQ implementing procedures should include planning and conduct of DOE RRs:
 - Qualification and Selection of RR team (Team Lead identified in POA)
 - Development of IP
 - Planning for conduct of the RR
 - Support of RR including support for team and team leader
 - Conduct of RR including process and reports
 - Relationship and interactions between SAA and Team Leader



Expected Process Improvements

- All startups and restarts will be formally evaluated for level of readiness review
- Reduction in number of ORRs
- Scope of Readiness Assessments will be more appropriate and defensible
- Readiness Assessments across complex will be more consistent
- Local “workaround” processes will be eliminated
- Consistency in SNRs will enhance better planning and time management
- Requirements for Implementation Plans will result in more assurance that the readiness review actually evaluates the necessary scope



Expected Process Improvements

- Readiness assessments will be more effective
 - Content of Plans of Action specified and more comprehensive
 - Scope formally defined and defensible
 - POA, IP, and final reports individually structured
 - Formal designation of readiness by line management will result in fewer premature starts of RRs
 - Authority of Team Leader and team more clearly defined
- Improved DOE oversight of readiness review process at all levels



Implementation

Implementation of this Order for DOE Line management must be completed in 180 days from the issuance of the Order, unless a different schedule is approved by the PSO with concurrence of the CTA. Those previously identified and defined readiness activities scheduled to be completed within one year of the issuance of the Order must be subject to the former version of the Order unless approved otherwise by the PSO with concurrence of the CTA.



Implementation

- Traveling road show to all DOE sites by representative of HSS and HQ program office –consistent explanation of changes and new expectations to management
- Oak Ridge Readiness Review Workshop in August-share ideas on contents of implementing procedures
- Development of contractor and Site Office implementing procedures (some existing procedures will require minimal changes with most additions to reflect additional requirements for RAs)



Implementation

Once DOE O 425.1D is in the contract, contractor implementing procedures are concurred on, and Site Office implementing procedures are approved, sites can take advantage of DOE O 425.1D requirements. Otherwise, DOE O 425.1C requirements stay in effect.