



*Program and Project Management for the
Acquisition of Capital Asset Projects*

And

**Application of DOE Order 413.3B
to
Office of Science**

February 2011

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Office of Project Assessment

Office of Science, U.S. Department of Energy

<http://www.science.doe.gov/opa/>



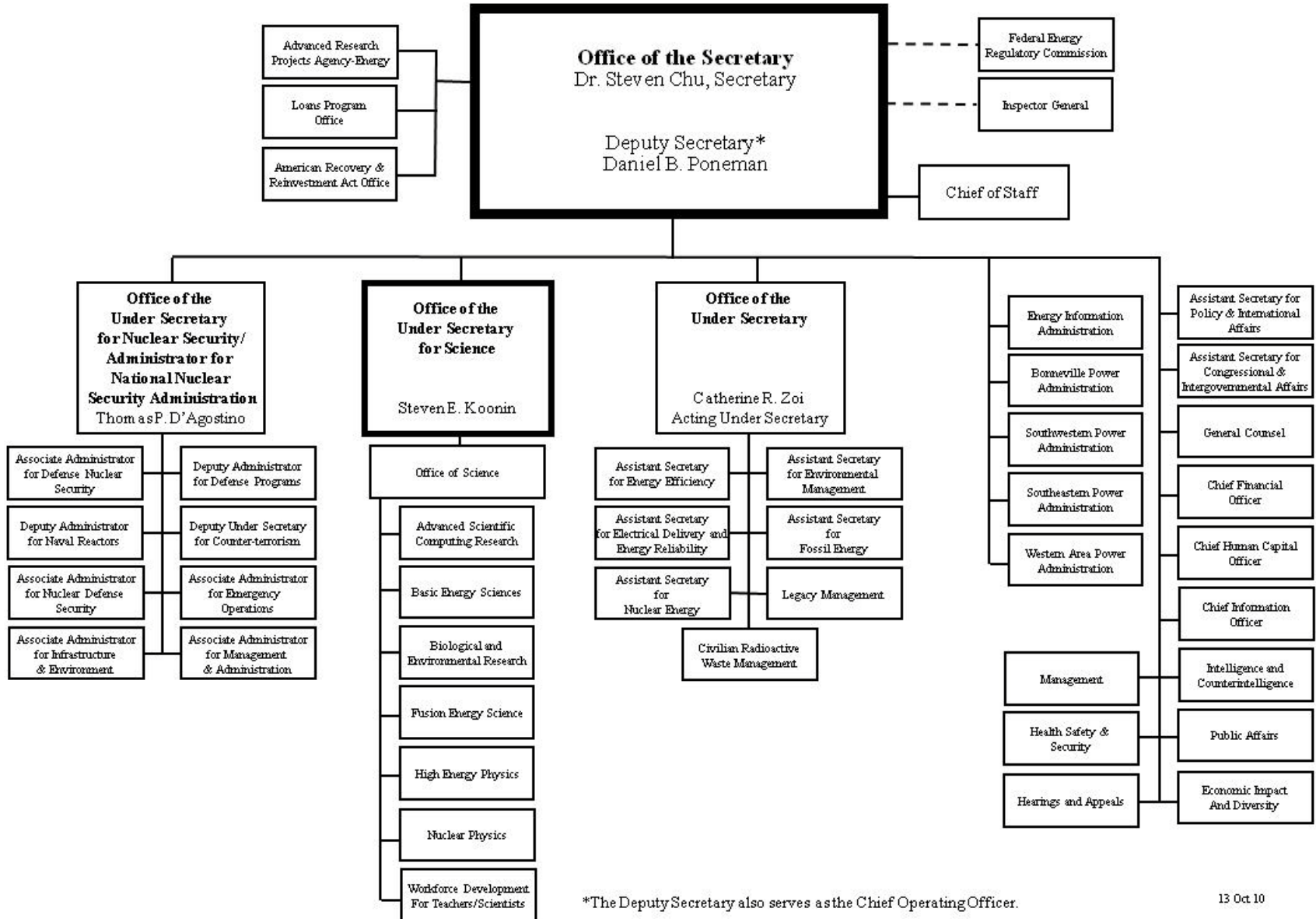
- Unique Features of SC Projects
- SC Organization and Management
- SC Project Management Performance
- Federal Project Director Expectations
- SC Contractor Expectations
- Lessons Learned
- Final Thoughts
- DOE Order 413.3B and SC Application
- Document Templates



Unique Features of Science Projects*

- SC Laboratories are **Not-for-Profit**
- Projects are typically **'design to cost'** with a goal to maximize science capability
- Facility **users are engaged** throughout the project lifecycle
- Lehman (peer) reviews are regular, recognized by the science community, and **facilitate active sharing of lessons learned** from other projects

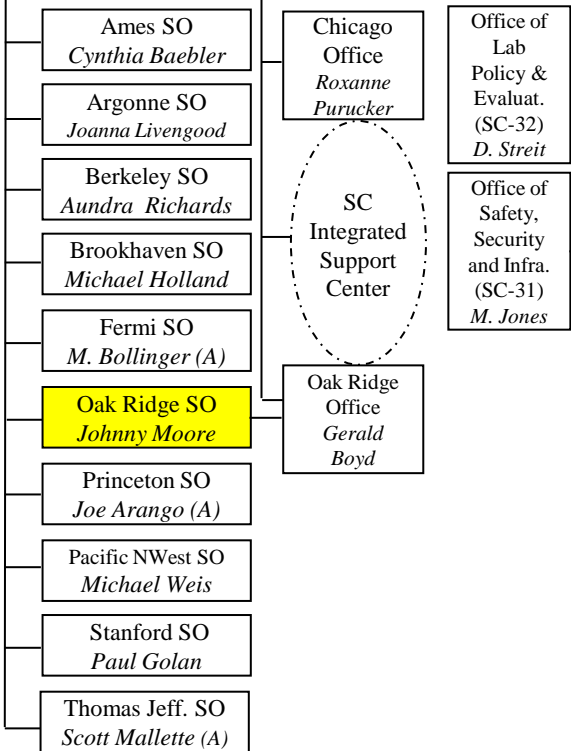
*(with Implications for Project Management)



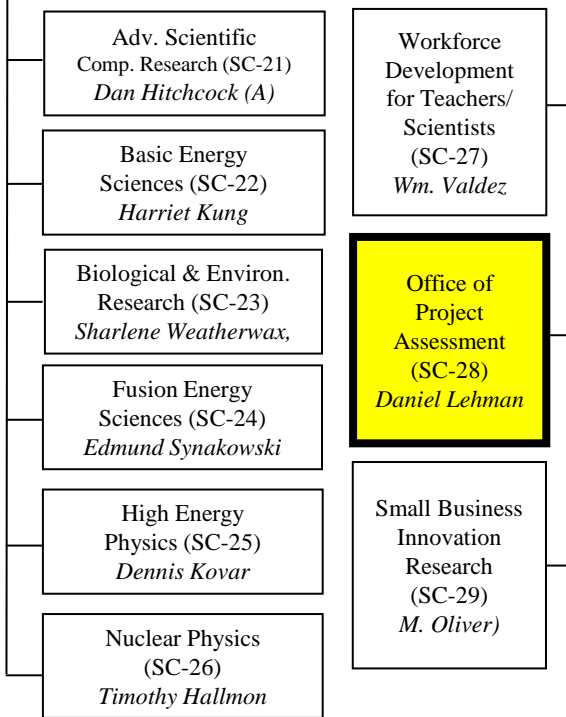


Office of the Director (SC-1) *William F. Brinkman*

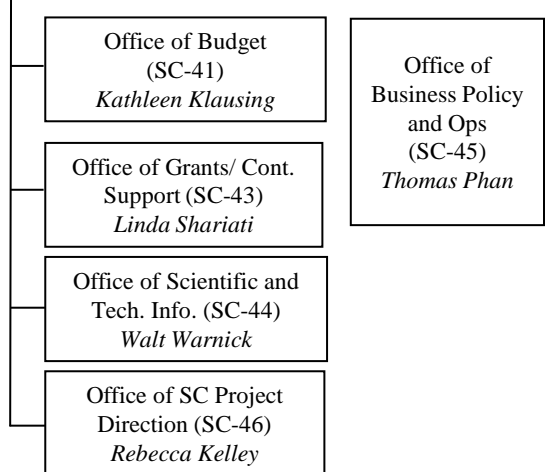
Deputy Director for Field Operations (SC-3) *George Malosh*



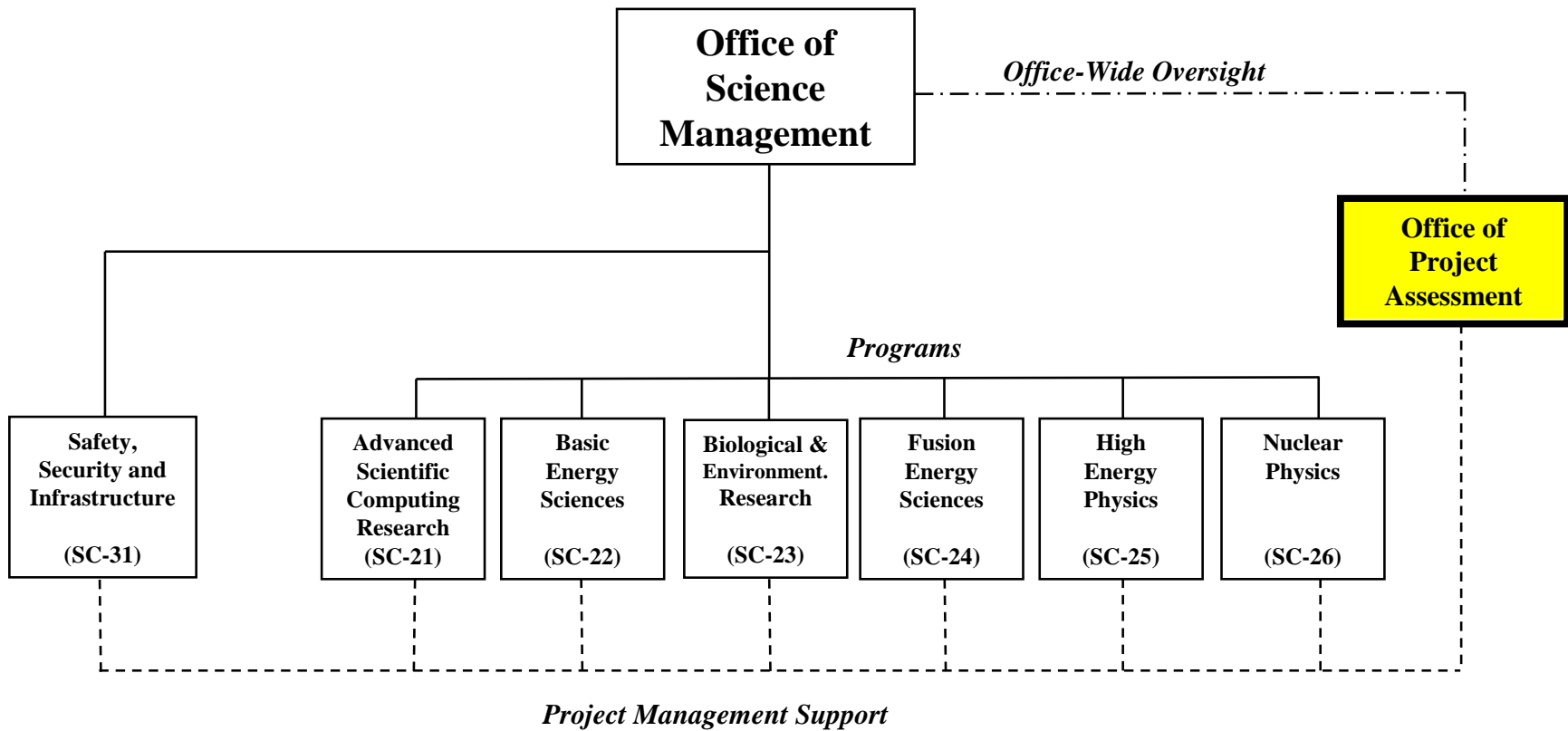
Deputy Director for Science Programs (SC-2) *Patricia Dehmer*

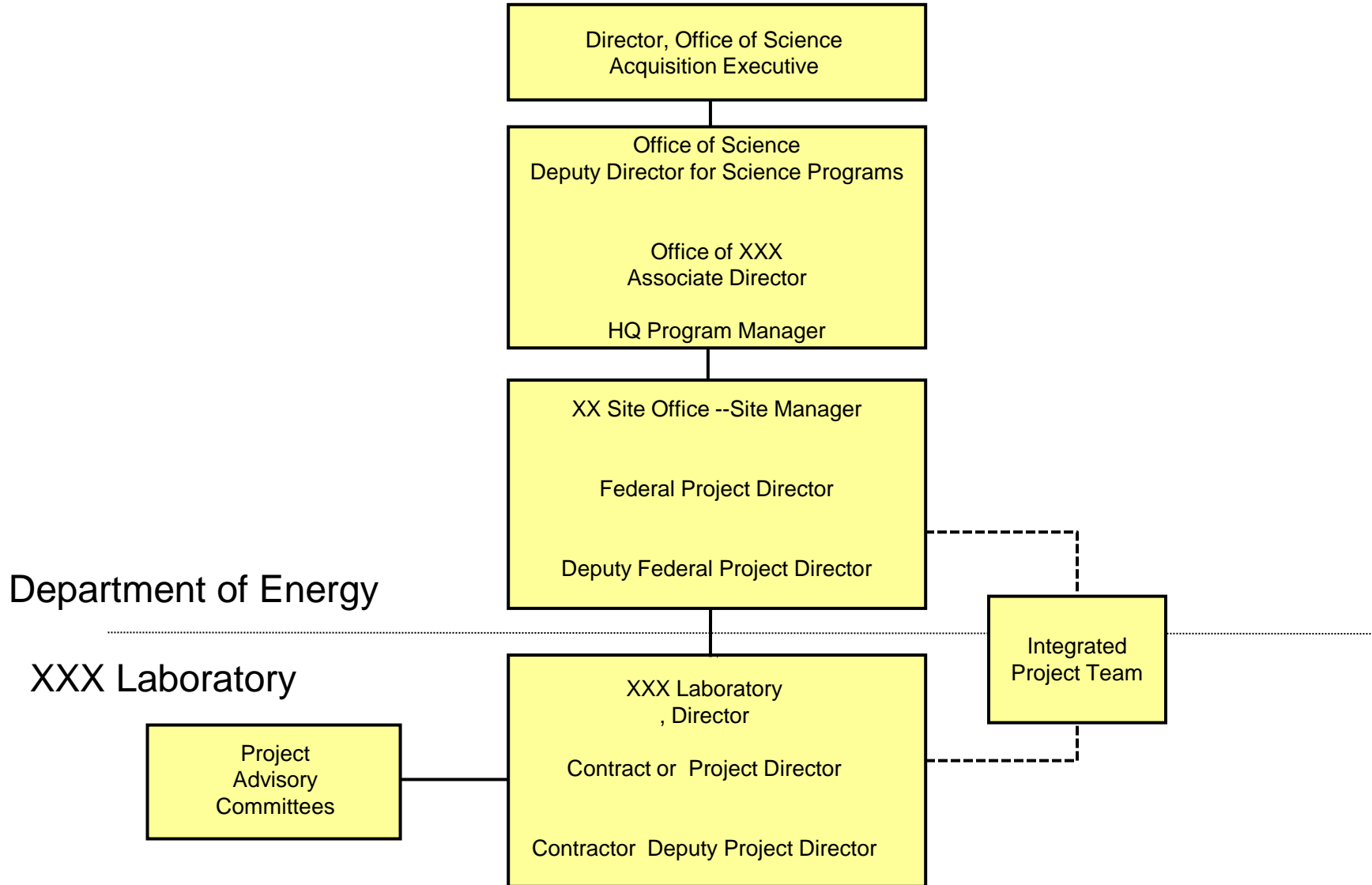


Deputy Director for Resource Management (SC-4) *Jeffrey Salmon*



(A) Acting







- The overall SC objective is to select competent and capable FPDs to successfully manage SC projects
- FPDs role is to be the “Owner’s Representative” for the assigned project
- FPDs serve as the single point of contact between DOE and the contractor, typically as a Contracting Officer’s Representative
- FPDs lead the Integrated Project Team and are responsible and accountable within DOE for ensuring the success of the assigned project



SC Project Management Performance

Over the past 10-years (2000 to 2010) SC has successfully completed over 90% of its projects within the CD-2 approved cost baseline

SITE	# of Completed Projects	# Cost Success	% Success by Cost	# Schedule Success	% Success by Schedule	Initial Baseline TPC (\$M)	Final TPC (\$M)	% Cost Increase
Argonne National Laboratory	4	4	100%	3	75%	\$59.5	\$59.5	100%
Brookhaven National Laboratory	7	7	100%	7	100%	\$133.2	\$133.1	100%
Fermi National Laboratory	8	7	88%	7	88%	\$736.1	\$768.1	104%
Jefferson National Accelerator Facility	1	1	100%	1	100%	\$10.9	\$10.9	100%
Lawrence Berkeley National Laboratory	6	6	100%	6	83%	\$173.0	\$175.3	101%
Oak Ridge National Laboratory*	10	10	100%	10	100%	\$1,477.5	\$1,549.5	105%
Pacific Northwest National Laboratory	0	0	N/A	0	N/A	\$0.0	\$0.0	N/A
Princeton Plasma Physics Laboratory**	3	2	67%	2	67%	\$121.3	\$121.3	100%
Sandia National Laboratory (NNSA Operated)	1	1	100%	1	100%	\$75.8	\$75.8	100%
Stanford Linear Accelerator Center	5	3	60%	4	80%	\$500.9	\$545.9	109%
TOTAL SC PROJECTS*	45	41	91%	41	91%	\$3,288.2	\$3,439.4	105%

Capital Asset Projects--defined as having Total Project Cost (TPC) \$5M or greater.

* Defined by as completed within original cost & schedule baseline with the exception of SNS and ALS-USB which were Directed Changes. SNS baseline cost adjusted to reflect the directed change. The unsuccessful projects include: NuMI, LAT, LCLS, SORIP, ANL Fire Safety Upgrade,

**Includes NCSX which was cancelled on July 2008.



Summary of Lessons Learned

- Project's **purpose** and benefits **must be clear** and effectively communicated to all stakeholders (e.g., users)
- Project team's success depends on establishing and nurturing **strong** working and personal **relationships**
- **Front-end planning** is an essential mechanism for identifying and addressing risk in all project phases
- **Stable project funding** is essential to maintain project momentum
- Project reviews provide necessary **"Checks and Balances"** to keep the project on track and build credibility.



Final Thoughts on Project Success

- Sound baselines are important; stable funding is critical
- Projects too often have optimistic rather than realistic view of events
- Projects slow to look outside for solutions (defensive routines)

Management, Management, Management!



- ✓ Tailoring is necessary for efficient delivery of projects and **should be applied to all projects** considering the risk, complexity, size and cost.
- ✓ Tailoring **does not imply the omission** of essential elements but may include:
 - Consolidation or phasing of CDs,
 - Substituting equivalent documents,
 - Using a graded approach to document development and content
 - Delegation of authority
 - Adjust scope of IPRs and EIRs
 - Others
- ✓ Tailoring **must be identified prior to CD-1** in the Acquisition Strategy, preliminary PEP and/or Tailoring Strategy (if separate document)
- ✓ Tailoring does not apply to nuclear safety requirements.



Requires additional reviews including the following:

Requirements	DOE O 413.3A	DOE O 413.3B
<u>Additional Reviews</u>		<ul style="list-style-type: none"> • Prior to CD-0—An Independent Cost Reviews (ICR) by OECM for TPC of \$750M or greater • Prior to CD-1—An Independent Cost Estimate (ICE) or ICR by OECM for TPC of \$100M or greater, as appropriate • Prior to CD-2—An ICE by OECM for TPC of \$100M or greater • Prior to CD-3—An ICE by OECM for TPC of \$100M or greater, if warranted • Annual Peer Reviews for TPC of \$100M or greater • Prior to CD-2—Project Definition Rating Index for TPC of \$100M or greater (if applicable) • Prior to CD-2 and 3—Technology Readiness Assessment for TPC of \$750M or greater (if applicable)



Increased approval authority, applicability, and certification thresholds.

Requirements	DOE O 413.3A	DOE O 413.3B
<i>Project Cost Applicability*</i>	<ul style="list-style-type: none"> • \$20M or greater 	<ul style="list-style-type: none"> • \$50M or greater
<i>Reassess Selected Alternative</i>		<ul style="list-style-type: none"> • If the CD-1 top end cost increases by 50% or more, the Program must reassess the alternative selection prior to CD-2.
<i>Deviation Approval by Deputy Secretary</i>	<ul style="list-style-type: none"> • TPC increase of \$25M or 25% or • Greater than 6 months delay 	<ul style="list-style-type: none"> • TPC increase of \$100M or 50%
<i>EVMS Certification</i>	<ul style="list-style-type: none"> • OECM Certifies the Contractor EVMS if there are project is \$50M or greater in TPC prior to CD-2 	<ul style="list-style-type: none"> • OECM Certifies the Contractor EVMS if there are project with TPC \geq\$100M prior to CD-3 • PMSO Certifies the Contractor EVMS if there are project with projects \$50M to less than \$100M in TPC prior to CD-3. • Contractor Self certify for if there are projects less than \$50M prior to CD-3.



FUNDING & BUDGETING

Added new requirements for project funding

Requirements	DOE O 413.3A	DOE O 413.3B
<i>Allow Construction Budget Request Prior to CD-2</i>	<ul style="list-style-type: none">• Yes—If design period is less than 18 months	<ul style="list-style-type: none">• Yes—If CD-2 is approved within 1 year of OMB budget submission
<i>Full Funding</i>	<ul style="list-style-type: none">• No	<ul style="list-style-type: none">• AE must consider fully funding projects (excluding MIE) with a TPC less than \$50M.
<i>Changes to Funding Profile After CD-2</i>	<ul style="list-style-type: none">• Not specified	<ul style="list-style-type: none">• AE must endorse any changes to the approved funding profile that negatively impacts the project.



Changes to Responsibilities Section

Requirements	DOE O 413.3A	DOE O 413.3B
<i>FPD Selection and Approval by AE</i>	<ul style="list-style-type: none"> • AE approves appointment of FPD 	<ul style="list-style-type: none"> • AE will interview proposed FPD prior to approval of appointment.
<i>Governance Board to Resolve Issues</i>		<ul style="list-style-type: none"> • Governance Board will be created to resolve project management issues.
<i>HQ Program Managers</i>		<ul style="list-style-type: none"> • HQ Program Managers must provide monthly project assessment in PARS II.
<i>New Organizations</i>		<ul style="list-style-type: none"> • Added Senior Procurement Executive (SPE)—executes procurement functions. • Added Contracting Officer Responsibilities.



EXEMPTIONS

Allows for more exclusions and exemptions

Requirements	DOE O 413.3A	DOE O 413.3B
<i>IT Projects</i>	<ul style="list-style-type: none"> • Yes—IT Projects needed to comply with 413.3A 	<ul style="list-style-type: none"> • All IT projects are excluded from all the requirements of the 413.3B.
<i>Exemptions from Order</i>		<p>Yes*—Programs are excluded from the requirements if the Program has:</p> <ul style="list-style-type: none"> • An established Project Management Support Office with adequate project management processes and procedures defined. • A set of active capital asset projects, post CD-2, of over 10 projects at any time during the current FY; • Completed 90% of projects across a rolling three-year average, not to exceed by more than 10% of the original cost baseline for the original approved scope at CD-2 with a TPC greater than or equal to \$10M. <p style="text-align: right;">SC Qualifies!</p>



DOE O 413.3B includes new language that **excludes Programs from the requirements** if the Program has:

- ✓ An **established Project Management Support Office** with adequate project management processes and procedures defined.
- ✓ A set of **active capital asset projects**, post CD-2, of **over 10 projects** at any time during the current FY;
- ✓ Completed **90%** of projects across a rolling **three-year average**, not to exceed by more than **10%** of the original cost baseline for the original approved scope at CD-2 with a TPC greater than or equal to \$10M.

SC is Exempt!



Q: Project Engineering and Design (PED) funds can't be used for construction. Does this mean that PED can't be used beyond CD-3?

A: *PED funds are used for design after the approval of CD-1. Design activities can extend beyond CD-3 and even up to CD-4. Therefore, PED funds can be used for design activities between CD-1 and CD-4.*

PED funds can be used for long-lead procurement such as limited site preparation if identified in the Project Data Sheet (PDS).



Q: I hear that with this new Order, long-lead procurements (LLP) are not allowed prior to CD-2 or that CD-2 cannot be split. Is this true?

A: *No, this is not true, but it is more stringent to phase CD-2 and to obtain long-lead procurements prior to CD-2. The new requirement for long-lead procurements and splitting CD-2 are:*

- *Documents such as a Project Data Sheets requesting construction or PED funds to procure the long-lead items and funding approvals are in place.*
- *For LLP prior to CD-2, the default CD-2 cost baseline (or TPC) cannot exceed the upper limit of the CD-1 cost range.*
- *If the project has phased CD-2s, the cost of all phased CD-2s cannot exceed the upper limit of CD-1 Cost range.*
- *Each phased CD-2x becomes its own project with specific scope, TPC, and CD-4x date*
- *Each phased CD-2x must be entered in PARS II (if cost is \$10M or higher)*
- *The AE must approve the LLP and phased CD-2 plan as part of tailoring approach.*



Q: My project has a lot of contingency remaining. I want to use the contingency for additional work that is listed as objective Key Performance Parameters in the PEP. However, this work cannot finish until after the approved CD-4 date. **Does this mean the project did not meet the Performance Baseline?**

A: Yes—if the additional work being performed cannot be completed within the CD-4 date, the project did not meet the schedule baseline.



Q: The Order and the SC Decision Matrix has requirements for ICE or ICR, prior to CD-1, CD-2, and CD-3 for projects with TPC of \$100M or more. Are the ICE or ICR in addition to EIR/IPRs or will it be just one review?

A: *There will only be one review that will include ICE or ICRs as part of the EIR. If an EIR is performed, there will not be an IPR. If an IPR is performed if there are no ICE or EIRs.*



Q: There's a mistake in the Order—it says "Employ an Earned Value Management System compliant with ANSI/EIA-748B EVMS" prior to CD-2. Prior to CD-3 it repeats and says "Employ a certified Earned Value Management System compliant with ANSI/EIA-748B..."

A: *This is not a mistake—the difference is that*

- *Prior to CD-2, an EVMS compliant with ANSI/EIA-748B must be used.*
- *For CD-3 approval, an EVMS being used must be certified for ANSI/EIA-748B compliance.*
- *SC will lead the EVMS certification and surveillance reviews*

Summary of Major Requirements

TOTAL PROJECT COST (TPC)		\$750M or more	Less than \$750M to \$400M	Less than \$400M to \$100M	Less than \$100M to \$50M*	Less than \$50M* to \$20M	Less than \$20M to \$10M**		
DECISION / REQUIREMENTS¹ / APPROVAL²							Delegation Allowed		
Prior to CD0, Approve Mission Need Statement		Reviewed by SC-28 (OPA) Approved by SC-1	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-AD		
Prior to CD-1, Approve Acquisition Strategy		Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-2	Reviewed by SC-28 Approved by SC-AD	Reviewed by SC-28 Approved by SC-AD	Reviewed by SC-28 Approved by SC-AD		
CRITICAL DECISIONS	CD-0--APPROVE MISSION NEED	S-2 (CD-1 to 4 delegated, see below)	SC-1	SC-1	SC-AD	SC-AD	SC-AD		
	CD-1--APPROVE ALTERNATIVE SELECTION AND COST RANGE	S-4	SC-1	SC-1	SC-AD	SC-AD	SC-AD		
	CD-2 --APPROVE PERFORMANCE BASELINE	S-4	SC-1	SC-2	SC-AD	SC-AD	SC-AD		
	CD-3--APPROVE START OF CONSTRUCTION	SC-1	SC-1	SC-2	SC-AD	SC-AD	SC-AD		
	CD-4--APPROVE START OF OPERATIONS OR PROJECT COMPLETION	SC-1	SC-1	SC-2	SC-AD	SC-AD	SC-AD		
BASELINE MANAGEMENT	Changes to TPC	Deviations	If performance, scope, schedule, or cost baseline at CD-2 cannot be met, then SC-1 and SC-2 must be notified & a determination made to terminate the project or establish a new performance baseline.						
		New Performance Baseline Approval	S-4	SC-1	SC-2	SC-2	SC-2	SC-2	
		Directed Change	Project changes caused by Policy Directives that have the force and affect of law and regulation, or Regulatory, or Statutory action and are initiated by entities external to the Department.						
	No TPC Change	Routine Project Changes/ Control	Program	SC-AD	SC-AD	SC-AD	SC AD	SC AD	SC AD
			Project	Prog. Mgr., SOM or FPD	Prog. Mgr., SOM or FPD	Prog. Mgr., SOM or FPD	Prog. Mgr., SOM or FPD	Prog. Mgr., SOM or FPD	Prog. Mgr., SOM or FPD
Contractor			Contractor	Contractor	Contractor	Contractor	Contractor	Contractor	
REVIEWS	Mission Validation Independent Review	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD		
	Design Review Prior to CD-1, CD-2, and CD-3	Team External to Project	Team External to Project	Team External to Project	Team External to Project	Team External to Project	Team External to Project		
	Conduct Independent Project Review or External Independent Review prior to CD-0 to 3	ICE or ICR by OEMC with OPA	ICE or ICR by OEMC with OPA	ICE or ICR by OEMC with OPA	Prior to CD-1 to CD-4 by SC-28	Prior to CD-2 & CD-3 Tailored by SC-28	Prior to CD-2 & CD-3 Tailored by SC-28		
	SC-AD Request Annual Peer Reviews by PMSO Post CD-2	SC-28	SC-28	SC-28	SC-28	SC-28 Tailored	SC-28 Tailored		
	Performance Baseline Deviation Reviews after CD-2	SC-28	SC-28	SC-28	SC-28	SC-28	SC-28		
	EVMS Review--Certification Prior to CD-3 and BI-annual Surveillance (annual by contractor)	SC-28	SC-28	SC-28	SC-28	SC-28	N/A		
	ORR/RA--Operational Readiness Review/Readiness Assessment Prior to CD-4	Team External to Project	Team External to Project	Team External to Project	Team External to Project	Team External to Project	Team External to Project		
	Technology Readiness Assessment (TRA) prior to CD-2 and 3 by SAE or AE	N/A	N/A	N/A	N/A	N/A	N/A		
	Project Definition Rating Index (PDRI) by OEMC	N/A	N/A	N/A	N/A	N/A	N/A		
Hazard Cat. 1,2,3 Nuclear Facility-- Technical IPR Prior to CD-2	PSO	PSO	PSO	PSO	PSO	PSO			
REPORT ING	Monthly PARS II Reporting (EVMS for Projects>\$20 M)	Project Status After CD-0 and EV After CD-2					Monthly Project Status After CD-0		
	Monthly or Quarterly Project Reporting (QPR) or Meeting after CD-0	SC-AD Invite SC-1 and SC-28	SC-AD Invite SC-1 and SC-28	SC-AD Invite SC-2 and SC-28	SC-AD to invite SC-28	SC-AD to invite SC-28	SC-AD to invite SC-28		

CD-0 Requirements

		TOTAL PROJECT COST (TPC)	\$750M or more	Less than \$750M to \$400M	Less than \$400M to \$100M	Less than \$100M to \$50M*	Less than \$50M* to \$20M	Less than \$20M to \$10M**
DECISION / REQUIREMENTS¹ / APPROVAL²								Delegation Allowed
CD-0--APPROVE MISSION NEED		S-2 (CD-1 to 4 delegated)	SC-1	SC-1	SC-AD	SC-AD	SC-AD	SC-AD
PRIOR TO CD-0-- PRECONCEPTUAL PLANNING	Perform Pre-Conceptual Planning Activities	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD
	Mission Validation Independent Review	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD
	Approve Mission Need Statement	Reviewed by SC-28 (OPA) Approved by SC-1	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-AD
	Conduct an Independent Cost Review (ICR) for Major System Project	OECM	N/A	N/A	N/A	N/A	N/A	N/A
	<u>For NNSA--Prepare a Program Requirements Document</u>	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>For Hazard Cat. 1,2,3 Nuclear Facility--Develop & approve a Preliminary Safety Design Strategy document.</i>	<i>Safety Basis Approval Authority (SBAA)</i>	<i>Safety Basis Approval Authority (SBAA)</i>	<i>Safety Basis Approval Authority (SBAA)</i>	<i>Safety Basis Approval Authority (SBAA)</i>	<i>Safety Basis Approval Authority (SBAA)</i>	<i>Safety Basis Approval Authority (SBAA)</i>	<i>Safety Basis Approval Authority (SBAA)</i>
POST CD-0	Submit approved CD or equivalent documents to OECM	SC-28	SC-28	SC-28	SC-28	SC-28	SC-28	SC-28
	Submit request for PED funds. Prepare PDS and OMB 300s. MIE and O&E--request funding.	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD
	Proceed with Conceptual Design using Operating funds	Project	Project	Project	Project	Project	Project	Project
	Start monthly status PARS II reporting	Prog. Mgr. & FPD No Earned Value (EV)	Prog. Mgr. & FPD No Earned Value (EV)	Prog. Mgr. & FPD No Earned Value (EV)	Prog. Mgr. & FPD No Earned Value (EV)	Prog. Mgr. & FPD No Earned Value (EV)	Prog. Mgr. & FPD No Earned Value (EV)	Prog. Mgr. & FPD No Earned Value (EV)
	Start Monthly or Quarterly Project Reporting/Meeting	SC-AD Invite SC-1 and SC-28	SC-AD Invite SC-1 and SC-28	SC-AD Invite SC-2 and SC-28	SC-AD Invite SC-2 and SC-28	SC-AD to invite SC-28	SC-AD to invite SC-28	SC-AD to invite SC-28
<p>AD=Associate Director; AE=Acquisition Executive; CDNS=Chief of Defense Nuclear Safety; CNS=Chief Nuclear Safety; EIR=External Independent Review Conducted by OECM; EV=Earned Value; Site Office=Field Organization (SOM, lab, etc.); FPD=Federal Project Director; ICE=Independent Cost Estimate; ICR=Independent Cost Review; IPR =Independent Project Review; OCA=Office of Cost Analysis; PARS II= Project Assessment and Reporting System; PDS= Project Data Sheet; Prog. Mgr.=HQ Program Manager; Prog. Mgr. SO= Project Management Support Office; PSO=Program Secretarial Officer; S-2=Deputy Secretary; SAE=Secretarial Acquisition Executive; SOM=Site Office Manager; US=Under Secretary</p> <p>1. Documents and reports are not intended to be stand-alone and may be combined; 2. Where no approval authorities are noted, authorities are established through other directives or the Program Offices (e.g., Functions and Requirements Assignment Matrix).</p> <p>*DOE O 413.3B does not apply for Capital Asset projects with TPC of less than \$50M only the principles of the Order applies. However, projects will submit approved CD or equivalent documents and be entered in PARS II. Project performance will be tracked for all projects with TPC of \$10M or greater.</p> <p>**For projects with TPC of less than \$10M, the Order does not apply and project is not required to be in PARS II and performance will not be tracked by OECM.</p> <p>Tailoring is necessary for efficient delivery of projects and should be applied to all projects considering size, complexity, cost, and risks.</p> <p><input type="checkbox"/> Hazard Category 1, 2, and 3 nuclear facilities as defined in DOE STD only. <input type="checkbox"/> NNSA projects only</p>								

CD-1 Requirements

TOTAL PROJECT COST (TPC)		\$750M or more	Less than \$750M to \$400M	Less than \$400M to \$100M	Less than \$100M to \$50M*	Less than \$50M* to \$20M	Less than \$20M to \$10M**	
		DECISION / REQUIREMENTS ¹ / APPROVAL ²						Delegation Allowed
CD-1--APPROVE ALTERNATIVE SELECTION AND COST RANGE		S-4	SC-1	SC-1	SC-AD	SC-AD	SC-AD	
PRIOR TO CD-1--CONCEPTUAL DESIGN	Approve Acquisition Strategy	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-2	Reviewed by SC-28 Approved by SC-AD	Reviewed by SC-28 Approved by SC-AD	Reviewed by SC-28 Approved by SC-AD	
	Approve Preliminary Project Execution Plan (PEP)	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-2	Reviewed by SC-28 Approved by SC-AD	Reviewed by SC-28 Approved by SC-AD	Reviewed by SC-28 Approved by SC-AD	
	Appointment of the Federal Project Director (FPD)	S-4	SC-1	SC-1	SC-AD	SC-AD	SC-AD	
	Approve Integrated Project Team (IPT)	S-4	SC-1	SC-2	SC-AD	SC-AD	SC-AD	
	Develop a Risk Management Plan	Project	Project	Project	Project	Project	Project	
	Comply with the One-for-One Building Space Replacement	Project	Project	Project	Project	Project	Project	
	Complete a Conceptual Design	Project	Project	Project	Project	Project	Project	
	Document High Perf. & Sustainable Bldg. & Sustainable Env. Stewardship considerations	Project	Project	Project	Project	Project	Project	
	Conduct a Conceptual Design Review	Team external to project	Team external to project	Team external to project	Team external to project	Team external to project	Team external to project	
	Complete a Conceptual Design Report	Project	Project	Project	Project	Project	Project	
	Prepare a Preliminary Hazard Analysis Report	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	
	Develop and Implement an Integrated Safety Management Plan	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	
	Establish Preliminary Quality Assurance Program (QAP)	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	
	Identify general Safeguards and Security requirements for the recommended alternative	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	
	Complete National Environmental Policy Act (NEPA) Strategy by issuing a determination (i.e., EIS, EA)	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	
	Conduct Independent Project Review or External Independent Review	ICE or ICR by OECM with OPA	ICE or ICR by OECM with OPA	ICE or ICR by OECM with OPA	SC-28	SC-28 Tailored	SC-28 Tailored	
	Update PDS, or other funding documents for MIE and OE projects, and OMB 300s, if applicable.	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	
	Nuclear Facility	Hazard Cat. 1,2,3 Nuclear Facility--Update Safety Design Strategy (SDS)	SBAA & FPD, w/ CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/ CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/ CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/ CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/ CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/ CNS or CDNS concurrence, as appropriate
		Hazard Category 1, 2, and 3 nuclear facilities, conduct an Independent Project Review (IPR)	PSO	PSO	PSO	PSO	PSO	PSO
		Hazard Cat. 1,2,3 Nuclear Facility--Prepare a Conceptual Safety Design Report (CSDR)	SBAA via the CSVr	SBAA via the CSVr	SBAA via the CSVr	SBAA via the CSVr	SBAA via the CSVr	SBAA via the CSVr
Hazard Cat. 1,2,3 Nuclear Facility--Prepare Conceptual Safety Validation Report (CSVr)		SBAA	SBAA	SBAA	SBAA	SBAA	SBAA	
Hazard Cat. 1,2,3 Nuclear Facility--Initiate a Code of Record		Project	Project	Project	Project	Project	Project	
POST CD-1	Submit approved CD or equivalent documents to OECM	SC-28	SC-28	SC-28	SC-28	SC-28	SC-28	
	Allow expenditure of PED, MIE OR OE funds for project design.	Project	Project	Project	Project	Project	Project	
	Submit budget request for the remainder of TPC if CD-2 is approved w/ 1 year of OMB submission	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	
	Update PARS II with monthly status	Prog. Mgr. & FPD No Earned Value (EV)	Prog. Mgr. & FPD No Earned Value (EV)	Prog. Mgr. & FPD No Earned Value (EV)	Prog. Mgr. & FPD No Earned Value (EV)	Prog. Mgr. & FPD No Earned Value (EV)	Prog. Mgr. & FPD No Earned Value (EV)	
	Continue with Monthly or Quarterly Project Reporting/Meeting	SC-AD Invite SC-1 and SC-28	SC-AD Invite SC-1 and SC-28	SC-AD Invite SC-2 and SC-28	SC-AD to invite SC-28	SC-AD to invite SC-28	SC-AD to invite SC-28	
	Develop an Acquisition Plan if applicable							
	Nucl	Hazard Cat. 1,2,3 Nuclear Facility--Develop a Checkout, Testing & Commissioning Plan	Project	Project	Project	Project	Project	Project

CD-2 Requirements

TOTAL PROJECT COST (TPC)		\$750M or more	Less than \$750M to \$400M	Less than \$400M to \$100M	Less than \$100M to \$50M*	Less than \$50M* to \$20M	Less than \$20M to \$10M**
		DECISION / REQUIREMENTS ¹ / APPROVAL ²					
CD-2--APPROVE PERFORMANCE BASELINE		S-4	SC-1	SC-2	SC-AD	SC-AD	SC-AD
PRIOR TO CD-2--PRELIMINARY DESIGN	Approve updated Acquisition Strategy if changes are major	SC-1 with SC-28 concurrence	SC-1 with SC-28 concurrence	SC-1 with SC-28 concurrence	SC-1 with SC-28 concurrence	SC-AD with SC-28 concurrence	SC-AD with SC-28 concurrence
	Establish a Performance Baseline (PB)	FPD	FPD	FPD	FPD	FPD	FPD
	Approve updated PEP	S-4	SC-1	SC-2	SC-AD	SC-AD	SC-AD
	Prepare a Baseline Fund. Profile & reflect in budget docs. & PEP. Consider full funding if TPC < \$50M	S-4	SC-1	SC-2	SC-AD	SC-AD	SC-AD
	Approval of Long-Lead Procurement	S-4	SC-1	SC-2	SC-AD	SC-AD	SC-AD
	Develop Project Management Plan, if applicable	N/A	N/A	N/A	N/A	N/A	N/A
	Complete Preliminary Design	Project	Project	Project	Project	Project	Project
	Incorporate High Perf. & Sustainable Bldg. & Sustainable Environmental Stewardship	Project	Project	Project	Project	Project	Project
	Conduct a Preliminary Design Review	Team external to project	Team external to project	Team external to project	Team external to project	Team external to project	Team external to project
	Complete Preliminary Design Report	Project	Project	Project	Project	Project	Project
	Perform Baseline Validation Review	ICE or ICR by OEMC with OPA	ICE or ICR by OEMC with OPA	ICE or ICR by OEMC with OPA	SC-28	SC-28	SC-28
	Conduct a Project Definition Rating Index analysis as part of an EIR	N/A	N/A	N/A	N/A	N/A	N/A
	Conduct a Technical Readiness Assessment & develop a Technical Maturation Plan	N/A	N/A	N/A	N/A	N/A	N/A
	Employ an EVMS compliant with ANSI/EIA-748A, or as defined in the contract	Contractor	Contractor	Contractor	Contractor	Contractor	N/A
	Prepare a Hazard Analysis Report	Field Organization (Site Office) or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab
	Continue with Quality Assurance Program	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab
	Conduct Preliminary Security Vulnerability Assessment, if necessary	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab
	Issue Final NEPA determination (i.e., FONSI)	SC-1 or Site Office	SC-1 or Site Office	SC-1 or Site Office	SC-1 or Site Office	SC-1 or Site Office	SC-1 or Site Office
	Update budget documents and Exhibit 300 if applicable	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD
	Nuclear Facility	Hazard Cat. 1,2,3 Nuclear Facility--Update Safety Design Strategy (SDS)	SBAA & FPD, w/CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/CNS or CDNS concurrence, as appropriate
Hazard Cat. 1,2,3 Nuclear Facility--Prepare a Preliminary Safety Design Report updating the CSDR		SBAA via the PSVR	SBAA via the PSVR	SBAA via the PSVR	SBAA via the PSVR	SBAA via the PSVR	SBAA via the PSVR
Hazard Cat. 1,2,3 Nuclear Facility--Prepare a Preliminary Safety Validation Report (PSVR)		SBAA	SBAA	SBAA	SBAA	SBAA	SBAA
Hazard Cat. 1,2,3 Nuclear Facility--Conduct a Technical Independent Project Review		PSO	PSO	PSO	PSO	PSO	PSO
Hazard Cat. 1,2,3 Nuclear Facility--Place Code of Record under Configuration Control	Project	Project	Project	Project	Project	Project	
POST CD-2	Submit approved CD or equivalent documents to OEMC. If applicable, any PB BCP to OEMC	SC-28	SC-28	SC-28	SC-28	SC-28	SC-28
	Submit budget request for the remainder of TPC	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD
	Update PARS II with monthly status	Prog. Mgr., FPD, and Contractor	Prog. Mgr., FPD, and Contractor	Prog. Mgr., FPD, and Contractor	Prog. Mgr., FPD, and Contractor	Prog. Mgr., FPD, and Contractor	Prog. Mgr. & FPD No Earned Value (EV)
	Continue with Monthly or Quarterly Project Reporting/Meeting	SC-AD Invite SC-1 and SC-28	SC-AD Invite SC-1 and SC-28	SC-AD Invite SC-2 and SC-28	SC-AD to invite SC-28	SC-AD to invite SC-28	SC-AD to invite SC-28
	SC-AD Request Annual Project Peer Review by PMSO	SC-28	SC-28	SC-28	SC-28	SC-28 Tailored	SC-28 Tailored

CD-3 Requirements

TOTAL PROJECT COST (TPC)		\$750M or more	Less than \$750M to \$400M	Less than \$400M to \$100M	Less than \$100M to \$50M*	Less than \$50M* to \$20M	Less than \$20M to \$10M**
DECISION / REQUIREMENTS ¹ / APPROVAL ²		Delegation Allowed					
CD-3--APPROVE START OF CONSTRUCTION		SC-1	SC-1	SC-2	SC-AD	SC-AD	SC-AD
PRIOR TO CD-3--FINAL DESIGN	Approve updated CD-2 Project Documentation (PEP, AS, PDS, etc) if major changes	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-1	Reviewed by SC-28 Approved by SC-2	Reviewed by SC-28 Approved by SC-AD	Reviewed by SC-28 Approved by SC-AD	Reviewed by SC-28 Approved by SC-AD
	Complete Final Design	Project	Project	Project	Project	Project	Project
	Incorporate High Performance & Sustainable Bldg. & Sustainable Env. Stewardship	Project	Project	Project	Project	Project	Project
	Conduct a Final Design Review	Team external to project	Team external to project	Team external to project	Team external to project	Team external to project	Team external to project
	Complete Final Design Report	Project	Project	Project	Project	Project	Project
	Employ a certified EVMS compliant with ANSI/EIA-748A, or as defined in the contract	Certified by SC-28	Certified by SC-28	Certified by SC-28	Certified by SC-28	Contractor	N/A
	Execution Readiness Review	ICE by OEM if warranted or IPR by OPA	ICE by OEM if warranted or IPR by OPA	ICE by OEM if warranted or IPR by OPA	SC-28	SC-28	SC-28
	Conduct a Technology Readiness Assessment, where significant CTE modification occurs	N/A	N/A	N/A	N/A	N/A	N/A
	Update the Hazard Analysis Report	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab
	Prepare Construction Project Safety and Health Plan	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab
	Update the Quality Assurance Program	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab
	Finalize the Security Vulnerability Assessment Report, if necessary	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab
Nuclear Facility	Hazard Cat. 1,2,3 Nuclear Facility--Update Safety Design Strategy (SDS)	SBAA & FPD, w/ CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/ CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/ CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/ CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/ CNS or CDNS concurrence, as appropriate	SBAA & FPD, w/ CNS or CDNS concurrence, as appropriate
	Hazard Cat. 1,2,3 Nuclear Facility--Prepare a Preliminary Documented Safety Analysis ⁴ that updates the PSDR	SBA Authority via the SER	SBA Authority via the SER	SBA Authority via the SER	SBA Authority via the SER	SBA Authority via the SER	SBA Authority via the SER
	Hazard Cat. 1,2,3 Nuclear Facility--Prepare a Safety Evaluation Report (SER)	SBAA w/ FPD concurrence	SBAA w/ FPD concurrence	SBAA w/ FPD concurrence	SBAA w/ FPD concurrence	SBAA w/ FPD concurrence	SBAA w/ FPD concurrence
	Hazard Cat. 1,2,3 Nuclear Facility--Revise the Code of Record	Project	Project	Project	Project	Project	Project
POST CD-3	Submit approved CD or equivalent documents to OEM. If applicable, any PB BCP to OEM	SC-28	SC-28	SC-28	SC-28	SC-28	SC-28
	Allow expenditure of TPC funds. Update budget document and OMB 300s if applicable.	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD
	Update PARS II with monthly status	Prog. Mgr., FPD, and Contractor	Prog. Mgr., FPD, and Contractor	Prog. Mgr., FPD, and Contractor	Prog. Mgr., FPD, and Contractor	Prog. Mgr., FPD, and Contractor	Prog. Mgr. & FPD No Earned Value (EV)
	Continue with Monthly or Quarterly Project Reporting/Meeting	SC-AD Invite SC-1 and SC-28	SC-AD Invite SC-1 and SC-28	SC-AD Invite SC-2 and SC-28	SC-AD to invite SC-28	SC-AD to invite SC-28	SC-AD to invite SC-28
	Perform EVMS surveillance review	Bi-annually by SC-28 Annually by Contractor	Bi-annually by SC-28 Annually by Contractor	Bi-annually by SC-28 Annually by Contractor	Bi-annually by SC-28 Annually by Contractor	Annually by Contractor	N/A
	Submit Lessons Learned regarding up-front planning and design 90 days after CD-3	FPD	FPD	FPD	FPD	FPD	FPD
	SC-AD Request Annual Project Peer Review by PMSO	SC-28	SC-28	SC-28	SC-28	SC-28 Tailored	SC-28 Tailored

CD-4 Requirements

		TOTAL PROJECT COST (TPC)	\$750M or more	Less than \$750M to \$400M	Less than \$400M to \$100M	Less than \$100M to \$50M*	Less than \$50M* to \$20M	Less than \$20M to \$10M**
DECISION / REQUIREMENTS ¹ / APPROVAL ²								Delegation Allowed
CD-4--APPROVE START OF OPERATIONS OR PROJECT COMPLETION			SC-1	SC-1	SC-2	SC-AD	SC-AD	SC-AD
PRIOR TO CD-4--CONSTRUCTION	Verify achievement of Key Performance Parameters/Project Completion Criteria		FPD	FPD	FPD	FPD	FPD	FPD
	Conduct readiness to operate review and issue a Project Transition to Operations Plan		Team external to project	Team external to project	Team external to project	Team external to project	Team external to project	Team external to project
	Conduct Independent Project Review		SC-28	SC-28	SC-28	SC-28	SC-28 Tailored	SC-28 Tailored
	Finalize the Hazard Analysis Report		Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab
	Revise the Environmental Management System, as appropriate)		Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab
	If Applicable, complete and submit Contractor Evaluation Documents		N/A	N/A	N/A	N/A	N/A	N/A
	Complete Draft Project Closeout Report		FPD	FPD	FPD	FPD	FPD	FPD
	<i>Hazard Cat. 1,2,3 Nuclear Facility--Conduct Operational Readiness Review, Readiness Assessment</i>		Team external to project	Team external to project	Team external to project	Team external to project	Team external to project	Team external to project
	<i>Hazard Cat. 1,2,3 Nuclear Facility--Prepare the Documented Safety Analysis</i>		SBA Authority via the SER	SBA Authority via the SER	SBA Authority via the SER	SBA Authority via the SER	SBA Authority via the SER	SBA Authority via the SER
	<i>Hazard Cat. 1,2,3 Nuclear Facility--Prepare a Safety Evaluation Report (SER)</i>		SBAA	SBAA	SBAA	SBAA	SBAA	SBAA
<i>Hazard Cat. 1,2,3 Nuclear Facility--Submit Code of Record</i>		Project	Project	Project	Project	Project	Project	
POST CD-4 AND PROJECT CLOSEOUT	Submit approved CD or equivalent documents to OECM.		SC-28	SC-28	SC-28	SC-28	SC-28	SC-28
	Finalize in PARS II project completion		FPD	FPD	FPD	FPD	FPD	FPD
	Perform final administrative and financial closeout		Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab	Site Office or Lab
	Prepare an Initial Project Closeout Report 90 days after CD-4		FPD	FPD	FPD	FPD	FPD	FPD
	Submit Lessons Learned regarding project execution and facility start-up 90 days after CD-4		FPD	FPD	FPD	FPD	FPD	FPD
	Complete Facility Sustainment goals and document achievements w/1 one year.		FPD	FPD	FPD	FPD	FPD	FPD
	Submit Final Project Closeout Report		FPD	FPD	FPD	FPD	FPD	FPD
	Include in site Ten Year Site Plan and establish property record in FIMS for facilities.		SC-AD	SC-AD	SC-AD	SC-AD	SC-AD	SC-AD



SC has developed simplified templates for project documents

Mission Need Statement

- ✓ The primary document by Program to initiate exploration of options to fulfill a capability gap
- ✓ High level document—is not an engineering study or a proposed solution to a capability gap
- ✓ Approximately 8-10 pages

Acquisition Strategy

- ✓ Analysis and selecting the most reasonable alternatives to the one best suited for the project
- ✓ Describes high level business and acquisition approach realizing the selected alternative.
- ✓ Approximately 10-15 pages

Project Execution Plan

- ✓ The primary agreement between Headquarters, the FPD, and the contractor
- ✓ The primary and official document that defines the Performance Baseline.
- ✓ Main text approximately 25-35 pages.

Project Closeout Report (Draft required prior to CD-4)

- ✓ Documents what was baseline and actual accomplishments
- ✓ Documents project Lessons Learned
- ✓ Main text approximately 20-35 pages.

Templates are available at <http://www.science.doe.gov/opa/13docs.html>