Enclosure 8 to ET 07-0022

WCNOC Procedure AP 05-005, "Design, Implementation & Configuration Control of Modifications"



AP 05-005

DESIGN, IMPLEMENTATION & CONFIGURATION CONTROL OF MODIFICATIONS

Responsible Manager

Manager Design Engineering

Revision Number	11A
Use Category	Reference
Administrative Controls Procedure	Yes
Management Oversight Evolution	No
Program Number	05

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1.0 PURPOSE

1.1 This document describes the program used by Wolf Creek Nuclear Operating Corporation for the design and implementation of modifications to controlled and non-controlled Structures Systems and/or Components (SSCs).

2.0 SCOPE

- 2.1 This document addresses:
 - 2.1.1 Permanent engineering changes to controlled SSCs.
 - 2.1.2 Permanent changes to non-controlled SSCs, which do not impact the safe and reliable operation of WCGS.
- 2.2 STARS (Strategic Teaming and Resource Sharing) design change procedures and associated forms may be used as an alternate means of documenting engineering change. The following STARS procedures, and associated forms, are approved for use.
 - 2.2.1 STARS-ENG-5000, Engineering Configuration Management Program, revision 001
 - 2.2.2 STARS-ENG-5001, Engineering Change Packages, revision 001
 - 2.2.3 STARS-ENG-5003, Commercial Change, revision 000
- 2.3 Use of the STARS procedures for design and configuration change activities at Wolf Creek is a qualifying activity and as such these STARS procedures cannot be used if they are not incorporated into the applicable WCNOC qualification standard.
- 2.4 STARS procedures shall not be used for WCNOC 'R' Repair/Alteration Program activities.

3.0 REFERENCES AND COMMITMENTS

- 3.1 References
 - 3.1.1 AP 05-001, Change Package Planning and Implementation
 - 3.1.2 AP 05A-001, Design Inputs
 - 3.1.3 AP 05F-001, Design Verification
 - 3.1.4 AP 05-002, Dispositions and Change Packages
 - 3.1.5 AP 05-003, Design Document Change Notice
 - 3.1.6 AP 05-007, Determination of Safety Classification

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<u> </u>	3.1.7	AP 15A-003, Records
	3.1.8	AP 15A-006, Release, Control and Distribution of Change Packages
	3.1.9	AP 16C-006, MPAC Work Request/Work Order Process Controls
	3.1.10	AP 21I-001, Temporary Modifications
	3.1.11	AP 22D-001, Refueling Outage Planning and Implementation
	3.1.12	AP 24-002, Requisition And Procurement Process
	3.1.13	AP 26A-003, 10 CFR 50.59 Reviews
	3.1.14	AP 27-004, Controlling Safeguards Information
	3.1.15	AP 28A-001, Performance Improvement Requests
	3.1.16	AP 230-001, Plant Health Committee
	3.1.17	AP 28B-001, Root Cause Analysis
	3.1.18	AP 05-010, Design Drawings
	3.1.19	10CFR50, Appendix B, Nuclear Quality Assurance Requirements
	3.1.20	10CFR50.59, Changes, Tests and Experiments
	3.1.21	AP 16A-001, R Program Repairs/Alterations
	3.1.22	ANSI N18.7-1976/ANS 3.2, Administrative Controls and Quality assurance for the Operational Phase of Nuclear Power Plants.
	3.1.23	AP 28-011, Resolving Deficiencies Impacting SSCs
	3.1.24	WCNOC-162, WCNOC Handbook for Professional Engineering Oversight and Conduct.
	3.1.25	WCNOC-3, Configuration Identification Scheme Manual
3.2	Commitme	nts
	3.2.1	WCNOC Letter No. WM 88-0028 dated January 29, 1988, from B. D. Withers (WCNOC) to the NRC (RCMS 1988-021)

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	3.2.2	Letter to the NRC, NO 91-0310, dated 10 Commitments to the NRC for Notification the Emergency Response Data Systems)/28/91, h of changes to					
	3.2.3	Letter to the NRC, ET 92-0013, dated Ma "NRC Approval of Operational Quality As Involving Configuration Change Package (RCMS #s 1992-071 thru 1992-078)	arch 23, 1992, ssurance Changes Process"					
	3.2.4	Performance Improvement Request NP93-01	130					
	3.2.5	PIR MA 91-0313, Post Modification Testi	ing					
	3.2.6	89-089 (Lic. Commitment ID No.), Operat Requirements. Response to Violation	tions Training 8908-02.					
	3.2.7	Response to Violation 8822-01 and 8905- Control Room Dwgs.	Response to Violation 8822-01 and 8905-03, Redlining Control Room Dwgs.					
	3.2.8	PIR MA 91-0329, Work Performed Prior to	PIR MA 91-0329, Work Performed Prior to PSRC Approval.					
	3.2.9	LER 96-006, Actuation of Engineered Safety Features Due To Failure of the "C" Steam Generator Feedwater Regulating Valve.						
	3.2.10	PIR 96-3361, Closeout of PIR Before CCB Status.	? Reaches AP6					
	3.2.11	ITIP 0011, SOER 83-8 Reactor Trip Brea	<pre>ker Failures.</pre>					
•	3.2.12	PIR 2002-1434, Identify training to complete prior to implementation of the modification						
4.0	DEFINIT	IONS						
4.1	Administ	trative Change	· · ·					
	4.1.1	A change to a controlled engineering do corrects discrepancies to bring the doo conformance with approved design. Also a Vendor's document which adds to but o the design.	ocument that cument into o the capture of loes not change					

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4.2 Change Package

4.2.1 A generic term used in this procedure to identify either Design Change Package (DCP) or Configuration Change Package (CCP) including all forms and associated documents. Open PMRs are also included. Change packages may also be classified as hardware change or document change. Attachments A, B and C show flow charts for the Engineering change process, hardware change for controlled SSCs and document change for controlled SSCs respectively.

4.3 Concurrent Modification

- 4.3.1 A Concurrent Modification is a hardware change that is being implemented in the field while the corresponding engineering change package is being prepared. Concurrent Modifications are not often performed because there exists an inherent risk that the field work already performed will have to be modified to ensure agreement with the final approved (and released) change package.
- 4.4 Configuration Change Package (CCP)
 - 4.4.1 A collection of documentation used to perform a Modification to Controlled Plant Equipment (including warehouse material), or revise design documentation, that satisfies the existing technical requirements of design output documents required for the SSC to perform its design function(s). [3.2.3 and 3.2.9]
- 4.5 <u>Controlled Plant Equipment (Controlled SSCs)</u> structures, systems and components that:
 - 4.5.1 are safety related, or
 - 4.5.2 whose functions impact the plant safety analysis; or
 - 4.5.3 are subject to special consideration, such as:
 - Warehouse material for controlled plant equipment
 [3.2.9]
 - 2. Maintenance Rule
 - 3. Supporting or promoting licensing basis, personnel safety, plant availability, commercial risk, etc.

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	4.5.4	Attachment D categorizes structures and (reference WCNOC-3) as either controlle controlled.	d systems ed or non-
4.6	Design Z	Authority	
	4.6.1	Design Engineering is the final technic responsible for maintaining the WCGS de	cal authority esign basis.
4.7	<u>D</u> esign B	Basis Information	
	4.7.1	Information which identifies the specifies be performed by a structure, system or facility, and the specific value or ranchosen for controlling parameters as refor design. These values may be restration generally accepted "state-of-the-afor achieving functional goals or requires from analysis (based on calculation and of the effect of a postulated accident structure, system or component must meas goals (10CFR50.2).	fic functions to component of a nge of values eference bounds aints derived art" practices irements derived d/or experiments) for which a et its functional
4.8	<u>Design C</u>	Change	
	4.8.1	A change where a function is changed of mode is introduced.	r a new failure
4.9	Design C	Change Package (DCP)	
	4.9.1	A collection of documentation used to p Modification to Controlled Plant Equipm warehouse material), or revise Engineer Documentation, which changes technical needed to perform an SSCs design function	perform a ment (including ring requirements ion(s). [3.2.9]
4.10	<u>Design E</u>	unction (or Function)	
	4.10.1	The operation an item is required to perturbe the basis for the component's or system	erform to meet n's design.
4.11	Design I	nput	
	4.11.1	Those criteria, parameters, basis, or c requirements upon which detailed final (From ANSI N45.2.11-1974)	other design design is based.

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4.12 Design Output

4.12.1 Documents such as drawing, specifications, and other documents defining technical requirements of structures, systems and components as delineated in Section 4 of ANSI N45.2.11. (From ANSI N45.2.11-1974)

4.13 Document Change

- 4.13.1 A change to a controlled engineering document.
- 4.14 Engineering Design Basis (or Design)
 - 4.14.1 The entire set of design constraints that are implemented, including those that are (1) part of the current licensing bases and form the bases for the regulator staff's safety judgments and (2) those that are not included in the current licensing bases but are implemented to achieve certain economies of operation, maintenance, procurement, installation, or construction. (NUREG-1397)
- 4.15 Engineering Information System (EIS)
 - 4.15.1 A comprehensive database of engineering design information. This system supersedes CSARs and incorporates many previously independent databases such as: Q-list, CRL, Calculation data base, total plant setpoint document, equipment qualification list, fuse list, etc. EIS is also a workflow management tool for processing and approving engineering change packages, calculations, SCAs etc.
- 4.16 Equivalent Change

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- 4.16.1 A hardware change that results in installation of an item, not identical to the original item, which meets the technical requirements of design function(s) of the item and applicable interfaces.
- 4.17 Field Change Request (FCR)
 - 4.17.1 A request to change an approved Change Package during its implementation or to provide as-built information. This request is communicated to Engineering via a WO/SWO.

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4.18 Generic/Ongoing Change Package

4.18.1 A Change Package providing a common disposition that pertains to multiple SSCs, in which a hardware change can be implemented on an "as-needed" basis. (See Section 5.6)

4.19 Hardware Change

4.19.1 A physical change to a structure, system or component installed in the plant or approved for installation in the plant (e.g. warehouse material). [3.2.9]

4.20 Implementing

4.20.1 A term used to differentiate between work orders that direct the installation of field work and those support tasks that track the completion of other support activities not required to be completed prior to the equipment being returned to an Operable status. These "other" activities consist of longer term document updates such as training, spare parts, warehouse material, PMs, procedures and some miscellaneous field cleanup activities. [3.2.9]

4.21 Independent Verification

4.21.1 The process of reviewing, confirming, or substantiating the design by one or more methods to provide assurance that the design meets the specified design inputs. Independent verification is performed by any competent individual or group other than those who performed the original design but who may be from the same organization. (From ANSI N45.2.11-1974)

4.22 Modification

- 4.22.1 A change to the Design or Configuration of plant hardware.
- 4.23 Non-Controlled (or Commercial) SSCs
 - 4.23.1 Plant Equipment which is not controlled. May also be referred to as commercial controlled SSCs. (see Controlled Plant Equipment)

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4.24 Qualifying Activities

- 4.24.1 Certain activities associated with the design change process are qualified activities. Procedure AP 30F-001, Engineering Support Personnel Training and Qualification Program, describes the qualification program.
- 4.25 Responsible Work Organization (RWO)
 - 4.25.1 A generic term used for any organization or work group that is assigned a work task during the Change Package implementation phase.

5.0 **RESPONSIBILITIES**

NOTE

Engineering design activities without regard to controlled, noncontrolled, safety related, or non-safety related are generally considered Practice of Engineering as defined in the Kansas Technical Professions Statutes, and performance of these engineering design activities are regulated by these statutes and associated rules and regulations. As a general rule, origination and revision of engineered documents, including drafting and other related design documents must be performed by or under the direct responsibility and supervision of a Licensed Professional Engineer. Wolf Creek compliance with these statutes, rules, and regulations is further described in WCNOC-162 (PE Handbook).

5.1 Manager Design Engineering

- 5.1.1 Ensuring this procedure is maintained as necessary to provide an effective permanent modification program that satisfies configuration control requirements.
- 5.1.2 Additional activities as defined in AP 05-001 and 002.
- 5.2 The Supervisor Configuration and Engineering Performance
 - 5.2.1 Updating Essential/Significant Drawings and updating applicable engineering documents.
 - 5.2.2 Establishing the as-built criteria and minimum standards for drawing updates.
 - 5.2.3 Additional activities as defined in AP 05-001 and 002.

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5.3 All Engineering Managers

- 5.3.1 Initiating, developing and revising Change Packages and related documentation required to support plant operations, licensing or capital improvement needs.
- 5.3.2 Responding to FCRs; establishing backout scope for backout FCRs in conjunction with the implementing organization.
- 5.3.3 Initiating procurement of required engineered items, including long lead time (>6 months) operational and start-up spares, in accordance with AP 24-002. (Also identifying any warranties that are to be obtained with the purchase. Typically warranties of one year after receipt for repairs are included on the Purchase Order.) [3.2.4]
- 5.3.4 Additional activities as defined in AP 05-001 and 002.

5.4 Implementation coordinator

- 5.4.1 Final planning and overall coordination for task assignment, the implementation of field work, the initiation of essential drawing releases, and other activities required to be complete before the equipment can be restored to an operable status.
- 5.4.2 Additional activities as defined in AP 05-001.

5.5 <u>Manager Maintenance</u>

5.5.1 Preparing, approving, implementing, and performing all necessary reviews and evaluations, for changes to noncontrolled SSCs (including regulatory reviews per AP 26A-003) and obtaining Engineering involvement if a 50.59 Screen and or Evaluation is required.

5.6 Supervisor Document Services

5.6.1 Providing release, control, distribution and storage functions for Change Packages and other change process documentation as required.

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5.7 Licensing

5.7.1 Notifying the NRC of changes to NRC monitored ERDS data points as follows: thirty (30) days prior to implementing changes that will affect the transmission format and computer communication protocol and, thirty (30) days after implementing a change that affects ERDS data points. [3.2.2]

5.8 <u>Station Personnel</u>

- 5.8.1 Requesting changes to controlled SSCs and noncontrolled SSCs, per established company methods (e.g., CR, CDR or WR).
- 5.9 Responsible Work Organization
 - 5.9.1 Attending Scoping meetings to provide design inputs, Change Package reviews and task assignments.
 - 5.9.2 Providing implementation and support services as assigned for Change Packages.
 - 5.9.3 Additional activities as defined in AP 05-001.

5.10 PSRC

- 5.10.1 Reviewing Change Packages or revisions that have a 50.59 Evaluation performed.
- 5.11 Manager Supply Chain Services
 - 5.11.1 Assist in maintaining the configuration control and inventory of warehouse materials based on input provided by engineering during change package development and processing. [3.2.9]

5.12 Engineering Supervisor

- 5.12.1 Assigns personnel to develop, review and verify dispositions and change packages.
- 5.12.2 Assigns Designated Licensed Engineers to projects involving the Practice of Engineering.
- 5.12.3 Manages assigned work group resources to support the company business plan initiatives.

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5.12.4 Manages and oversees the work group's interface between site processes, such as financial controls, work planning groups, project review groups, scheduling, etc. and the supervised engineers.

5.13 Designated Licensed Engineer

5.13.1 That Licensed Engineer assigned responsibility for a project or document involving Practice of Engineering. The Designated Licensed Engineer will have overall responsibility for performance of the work, including supervision of involved unlicensed individuals, final certification of the work, and final approval of the effort.

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6.0 PROCEDURE

NOTE

Engineering design activities without regard to controlled, noncontrolled, safety related, or non-safety related are generally considered Practice of Engineering as defined in the Kansas Technical Professions Statutes, and performance of these engineering design activities are regulated by these statutes and associated rules and regulations. As a general rule, Practice of Engineering includes drafting, origination and revision of design documents, and this work must be performed by or under the direct responsibility and supervision of a Licensed Professional Engineer. In addition to Licensed Professional Engineer, the services of a Licensed Architect, Surveyor or Landscape Architect may need to be considered as well. Wolf Creek compliance with these statutes, rules, and regulations is further described in WCNOC-162 (PE Handbook).

- 6.1 Initiate Modification Requests to Controlled SSCs and Non-Controlled SSCs, per Established Company Methods
 - 6.1.1 Any deficiency identified at any time during the change process should be immediately discussed with engineering supervision, and promptly identified on a WR or PIR. Refer to AP 16C-006 or AP 28A-001.
 - 6.1.2 All plant modifications should receive a cost benefit evaluation at a level commensurate with the job's expected cost. This cost benefit does not necessarily need to be documented in great detail for smaller jobs. This is to ensure that good business decisions are made prior to modifying the plant.
 - 6.1.3 Each activity / task is performed in accordance with the safety classification for that activity to envelope work governed by the document.
- 6.2 Design of Changes to Controlled SSCs (Engineering Change Process)
 - 6.2.1 General Notes:
 - Engineering design for refueling outage change packages is completed to satisfy milestones as directed by AP 22D-001.
 - 2. Disapproval of a Change Package may occur at any point prior to release by Document Services of the Change Package.

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	3.	Change Packages initiated due to a be disapproved any time prior to " planning" status. However assuran that the deficiency has been prope	deficiency may released for ce must be made rly addressed.
	4.	After being released by Document S Packages which are not to be imple cancelled. Engineering shall revis Package to cancel.	ervices, Change mented shall be e the Change
	5.	A generic/ongoing Change Package i where it is desirable to reflect to configuration on documents, once is rather than allowing a "configurat the documents. As implementation Implementation coordinator notifie facilitate the updating of applicat databases. Once the entire Change implemented, the normal close-out followed.	s used in cases he specific mplemented, ion option" on is completed the s Engineering to ble documents and Package is process is
	6.	The engineering change process beg establishing a need for engineering categories of engineering changes Change and Design Change.	ins with g change. The are Configuration
	7.	A Concurrent Modification is a hard is being implemented in the field corresponding engineering change paper prepared.	dware change that while the ackage is being
		a. Agreement to proceed with a par modification as a concurrent mo be obtained between engineering the control room Shift Manager	t or all of a dification must supervision and or designee.
		b. Obtain approval for the concurrence by the Designated Licensed Engine Professional Engineer oversight as described by WCNOC-162.	ent modification neer. is established
		c. The subject SSC must be 'out of Affected building structures may a concurrent modification althout taken out of service.	service'. y be included in ugh they are not
		d. Control of the concurrent modifing governed by AP 16C-006, MPAC WOR ORDER PROCESS CONTROLS. Work Of instructed by AI 16C-007, WORK (ication work is RK REQUEST / WORK rder Planning is ORDER PLANNING.

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	e. Concurrent Modifications may be performed for items or activities governed by the ASME Code. For use on this issue of concurrent modifications, ASME items are items constructed to ASME B&PV Code Sections I, III, IV, and VIII Division 1 and are now under the jurisdiction of ASME B&PV Code Section XI or the State of Kansas Boiler Act. Reference AP 16A-001, 'R' PROGRAM REPAIRS / ALTERATIONS and AP 16A-003, SECTION XI REPAIR / REPLACEMENT PROGRAM, for additional conditions / limitations on the use of concurrent modification for ASME items.
	f. The concurrent modification change package must be approved and released for planning and actions required by it, including compliance with the applicable Code requirements, must be implemented before the affected SSC is returned to service (e.g.,: release of clearance order for restoration).
8.	An equivalency evaluation is the process of determining that a replacement item, not identical to the original item, will meet the technical requirements of design function(s) of the original item and of applicable interfaces with other SSCs. The intent is to ensure that the replacement item will not affect the design functions of the item it replaces, or affect the design function of interfacing SSCs. Equivalency evaluation also must ensure that the replacement item will not introduce any failure modes not considered in the current design. To perform an equivalency evaluation, the Engineer must determine the normal and accident design functions of the SSC being replaced and of interfaces to other SSCs. Performance parameters, critical design characteristics and failure modes are then reviewed to determine the impact of any changes on design functions.

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9.	The evaluation of interfacing SSCs is important for two reasons. There may be cases where a replacement item is determined to be equivalent to the original item, but the physical interfaces may impact the ability of another SSC to perform a design function. For example, a replacement valve may meet all of the normal and accident functions of the original valve and the valve weight may not be a critical characteristic to the valve function. However, increased valve weight could impact a snubber which is designed for a specific weight range. Second, the interface requirements can vary for each installation when a generic component is used in multiple locations. When approving a generic replacement, the Engineer must consider all applications for which the generic component may be used.
10.	It should also be noted that changes to drawings

and databases may occur as a result of an equivalent change, and these need to be captured and processed as part of the equivalency process.

11. The Engineering Information System (EIS) is the management tool for processing change packages.

- 12. EIS is the database for engineering information, and it is kept as up to date and complete as possible. The EIS is to be used in all cases where it has superseded another database even though reference may still exist to the superseded database. Superseded databases may be maintained until migration of data to EIS has been completed and validated.
- 13. STARS procedures listed in the scope section of this procedure shall be used only on a case by case basis, as directed by the Design Engineering Manager.

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6.2.2 Initial Design Activities

NOTE

For those activities dealing with Practice of Engineering and requiring eventual certification, as described in WCNOC-162, a Designated Licensed Engineer will be assigned initial ownership of the activity. The Designated Licensed Engineer will fulfill the role of supervisor for the assigned activity except for those documents which the Designated Licensed Engineer originates and certifies him/herself.

- Designate a Licensed Engineer as owner of the design activity. See WCNOC-162 for further guidance and exceptions.
- 2. Establish the design objective. The objective of the design is a concise statement of the purpose of the change, its scope and/or a description of the problem to be resolved. The scope of the request should be investigated by discussion with the originator and other knowledgeable personnel, performing field walk downs, warehouse inventory reviews, reviewing performance trends and investigating industry information. [3.2.9]
- 3. Determine the engineering design basis. The engineering design basis of the SSC or item involved is determined in order to evaluate the impact of the request on the safe operation of the plant. When determining the Design Functions, the Engineer should establish functions of the SSCs during normal and accident operating conditions and the resulting safety classification. The engineer should also take failure modes into account.
- The Engineering Screening Form and the corresponding Applicability Statement are used to identify potentially impacted hazards and programs.
- 5. Investigate the root cause of the problem that initiated the request for engineering action. Identifying the root cause helps to ensure meaningful corrective action. The extent of this root cause should correspond with the significance of the problem and the cost of correcting the problem versus correcting the symptoms.

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	5. Formal Root Cause Analysis may be cases in accordance with AP 28B-0 Analysis. [3.2.1]	performed in some 01, Root Cause
	. With appropriate input from all p affected RWOs, establish a concep which is responsive to the engine	otentially tual solution ering request.
ξ	The purpose of a conceptual solut establish a basic idea of what po exist. Conceptual design ranges f thought process to documented alt depending on the complexity of th thought process includes consider advantages/disadvantages and a co alternatives. It should also det of design output documents might	ion is to tential solutions rom a simple ernatives e design. This ation of the st estimate of ermine what types be required.
	The development of a conceptual s require coordination with affecte coordinators and field personnel. industry experience, such as the programs, should be utilized in t process. The conceptual solution thoroughly discussed with potenti	olution will d program When available, ITIP and NPRDS he decision making s should be al RWOs.
	0. From the conceptual design, an in can be made regarding which poten should be pursued as an actual en	formed decision tial alternative gineering change.
-	 Review the change package for imp probabilistic safety assessment (quantification. 	act on plant PSA)
1	2. Any change package that alters th failure mode, control, etc., of a or system, can affect the plant P the resulting core damage quantif review is to ensure that individu accumulative effects of plant des exceed the established plant core criteria. The following gives a design changes that could affect quantification.	e function, type, given component SA model and thus ication. This al and ign changes do not damage frequency few examples of the PSA model and
	a. Change component types, e.g. f valve to a motor operated valv displacement pump to a centrif	rom a solenoid e, from a positive ugal pump, etc.
	b. Add or delete actuation signal	s to a component.

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	c. Change the power supply of a component to a different power source.
	13. The Engineering Screening Form and Engineering Contacts database may be used to identify programs impacted by a change.
6.2.3	Financial and Scheduling Considerations
	 The change may need approval as a major job if the estimated cost of the change, including engineering, implementation labor, materials and overheads is greater than a Management established limit.
6.2.4	Determination of Type of Output Document
	 Determine the appropriate output document for the modification using the guidance below. Choose the output document with the most stringent requirements.
	2. <u>Basic Engineering Dispositions</u> are not modification or output documents, but are described here for awareness.
	a. Basic Engineering Dispositions are used to provide information. They can communicate operating margin, but cannot provide design margin to the field.
	b. Basic Engineering Dispositions are not used to make changes, either documentation or hardware, nor to allow deficiencies to be 'used-as-is' or 'repaired'.
	c. Basic Engineering Dispositions do not require certification and supervision of a Licensed Professional Engineer. See WCNOC-162 for further guidance.
	3. <u>Configuration Changes</u> are used to make changes to design documents and/or controlled plant equipment. A Configuration Change Package:
	a. Dispositions an equivalent change.

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	}	Dispositions an administrative of definition) to engineering cont: Administrative changes do not re certification and supervision of Professional Engineer. See WCNO further guidance.	change (see rolled documents. equire f a Licensed DC-162 for
	C	. Does not add or remove SSCs.	
	(d. Does not add or change a function mode of an SSC.	on or failure
	e	e. Dispositions a repair or use-as- does not change functions or fa the controlled SSC.	-is change that ilure modes of
	4. <u>1</u>	Design Changes are the highest level change and require the most extension formalized documentation. A Design	el of engineering ive and n Change Package:
	ć	Adds or removes controlled SSCs	
	ł	 Adds or changes a function or fa existing, controlled SSC 	ailure mode of an
	C	Dispositions a repair or use-as- does change functions or failure controlled SSC.	-is change that e modes of the
	C	A. Alters the bounding parameters the established Design Basis In:	ised to define formation.
	5. () ()	Output documents include Design Dra Nork In Progress Drawings (WIPs), I Change Notices (DDCNs)and Specifica The usually prepared, reviewed, app Seleased with the change package.	awing Revisions, Design Drawing ations, and they proved and
	ć	. Output documents are prepared in their governing procedure.	n accordance with
	ŀ	Design Document Change Notices for documenting changes to design without immediately revising the documents. DDCNs are written age associated with a released design When issued by Document Services documents the "as built" condition field. They are issued in accord 05-003.	(DDCNs) are used gn documents e original gainst and gn document. s the DDCN ions in the rdance with AP

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	c. Drawings and vendor manuals an accordance with AP 05-013 and the "as built" conditions in t issued by Document Services.	ce issued in must also document the field, when [3.2.9]
	d. WIPs describe plant hardware of in some stage of field impleme documents will be incorporated document after field implement	changes which are entation. These d into the parent cation.
	e. Specifications are normally we the design development process minimize the impact of long pr times. New specifications or technically reviewed/verified issuance and may be issued spe procurement prior to the Chang issuance. Before equipment pu or revised Specification can k plant however, the authorizing must be reviewed and approved AP 05-002. This will typicall of the governing specification revisions may need to be place the Change Package is closed of	ritten as early in as possible to revisions are at the time of ecifically for ge Package archased to a new be installed in the g change package in accordance with y include a review as. Specification ed on hold until
	f. 'Essential Drawings' are those Operations considers essential operation. See also AP 05-010	e drawings that for normal plant), Design Drawings.
	g. Operations' ultimate need is t drawings reflect the as-built a system/component is returned a modification is completed. Essential Drawings are routine hours after the modification i facilitates the return of SSCs	to have these configuration wher d to service, after To meet this need, ely updated 24 s completed. This s to service.
	h. It has been found that the most of achieving the 24 hour turn interim modification documents along with the change package. already prepared on the WIPs, Management Group can then inco- changes into the parent docume than starting from scratch. If the preferred way to handle es- updates.	at expedient method around, is to have (WIPs) released With the changes the Configuration orporate the ents much faster Therefore, this is ssential drawing

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	i. If, due to extenuating circumstances, WIPs for Essential Drawings cannot be released at the same time as the change package, concurrence must be obtained from the Supervisor Configuration Management and Manager Operations or designee. In all cases, changes to Essential Drawings shall be issued or red-lined in the Control Room before the affected equipment is returned to service.
6.2.5	Detailed Design Development
	1. Design Inputs
	a. Identify design inputs, including any new input documents required. Design inputs should also be solicited from potential RWOs to ensure a quality product is developed.
	b. Design input includes design basis, regulatory requirements, codes and standards, or other design requirements upon which detailed final design is based. Design input should be to the level of detail necessary to permit the design activity to be carried out in a correct manner and to provide a consistent basis for making design decisions, accomplishing design verification and evaluation of design changes. Guidance on design input is contained in AP 05A- 001, Design Inputs.
	2. Resolution Coordination
-	a. Proposed changes must be coordinated with other engineering groups, disciplines and technical service organizations to ensure changes within the expertise of other disciplines and groups are properly considered and to ensure compatibility with concurrent change activities. This is the reason that affected components are identified upon initiation and during the change development. The extent of this coordination is contingent upon the complexity of the design activity.

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b.	Proposed changes should also be coordinated with the organization requesting the change and potentially affected RWOs, including Operations, to ensure that the design will be responsive to the needs of plant personnel, operational considerations are included in the design, and field conditions which could influence the design are considered.
с.	Proposed hardware changes should be coordinated with Supply Chain Services. This coordination will enable Supply Chain Services personnel to identify affected materials (e.g. assemblies, subassemblies and piece/parts) that will be either made obsolete or modified. The scope of this review should include Material or Purchase Requisitions and Purchase Orders as well as existing warehouse stock. [3.2.9]
d.	This coordination should begin early in the design process and continue until the final approval of the change. Coordination ranges from discussions with other groups/disciplines to distribution of conceptual designs for review by potentially impacted organizations. These reviews will cover concurrent engineering activities, hazards analysis, operational considerations and impact upon WCNOC programs.
e.	As part of this process, the Engineer shall initiate actions to ensure that field documents (e.g., procedures, training, etc.) affected by the changes are identified. This will ensure that these changes are implemented as necessary to return SSCs to service as part of the Engineering Change Package close-out process.
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	 Initiation of internal or support documentation. 	ing engineering
	 a. Internal/supporting documents by Engineering for design deve analysis which are not general field. Internal documents inc inputs, design verification, c hazards analysis, Seismic Repo electronic databases used for control. Internal documents s sufficiently detailed as to pu assumptions, design input, ref such that personnel technicall subject can review and underst and verify the adequacy of the recourse to the originator. S documents may be revised and r the Change Package process onl revision incorporates changes authorized through the Change b. See AP 05-002 for additional g internal documents may be pood 	are documents used lopment and other ly released to the lude design alculations, rts and other configuration hould be rpose, method, erences and units y qualified in the and the analysis result without ome internal eleased outside y when the properly Package process. uidance on which
	associated procedure.	
-	 Output documents are documentation Output documents are documents is part of the engineering change pr typically released to the field. include drawings, WIPs, DDCNs and Whenever practical, the use of DD avoided. While DDCNs may be nece expediency standpoint, it is betty document permanently. 	sued or revised as ocess that are Output documents specifications. CNs should be ssary from an er to change the
	2. Changes to output documents are a approved as part of a CCP/DCP. The of the output document may be revoluting the CCP/DCP close-out procerevision only incorporates change authorized through the CCP/DCP preadministrative changes. If the direvised in this manner, the drawing reviewed and approved in accordance and/or AP 05-003.	lways reviewed and ne actual revision iewed and approved ess provided the s properly ocess, including rawing is being ng must be ce with AP 05-010
	 The Engineering Disposition form a document. 	is also an output

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	4.	The relationships of affected components and documents are kept current in EIS to aid other designs under development.
		a. In general, changes to ESSENTIAL DRAWINGS should always be done with the use of WIPs or revisions. Under special circumstances it is desirable to ask for as-builts on an ESSENTIAL drawing.
		b. The request for as built drawings should be on a very limited basis in order to meet Engineering's commitment to Operations with regard to updating documents.
		c. Affected documents include, but are not limited to Engineering drawings, procedures, specifications, calculations, databases, design basis documents, system notebooks and topical notebooks that have been affected by the change.
	5.	Engineering Hazards Screenings
		a. Hazards screenings are performed to ensure that design basis and programmatic commitments are maintained. Examples of such programs include Fire Protection, EQ, and ALARA.
		b. Guidance on Hazards Screenings is located in AP 05-002.
	6.	Licensing 10CFR50.59 Applicability Determination/Screening/Evaluation.
		a. A 10CFR50.59 Applicability Determination is prepared for all Change Packages. This form is used to determine if a proposed activity is controlled by other more specific regulations and can be excluded from the scope of 10 CFR 50.59. Based on the results, a 50.59 Screening/Evaluation may be necessary.
		b. Additional guidance on 10CFR50.59 Reviews is located in AP 26A-003.

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NOTE

The individual performing an independent verification cannot also certify that document. See WCNOC-162 for further guidance.

6.2.7 Independent Verification

- Design changes made to SSCs within the scope of 10CFR50 Appendix B are required to be independently verified. Independent verification is the process of reviewing, confirming, or substantiating the design by one or more methods to provide assurance that the design meets the specified design inputs. Independent verification is performed by any competent individual or groups other than those who performed the original design.
- Generally, any activities which result in output documents such as drawings, specifications, and other documents which define technical requirements for safety related/special scope SSCs are subject to various levels of design review.
- 3. In unusual cases, the engineer's supervisor may perform the verification if the supervisor is the only technically qualified individual and not the Designated Licensed Engineer, and the need for the supervisor to perform the verification is approved and documented in advance by the supervisor's management.

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	4. The extent of the design verification function of the importance to safet under consideration, the complexity the degree of standardization, the art, and the similarity with previous designs. However, the applicability	on required is a y of the item of the design, state-of-the- ously proved

- designs. However, the applicability of standardized or previously proven designs, with respect to meeting pertinent design inputs, including environmental conditions, should be verified for each application. Where the design of a particular structure, system, or component has been subjected to an independent verification, the process need not be duplicated for identical design. However, known problems affecting the standardized design and their effects on other features must be considered. The original design and associated verification should, however, be adequately documented and referenced in the subsequent DCP.
- 5. When changes to previously verified designs have been made, design verification shall be required for the changes, including evaluation of the effects of the changes on the overall design. The extent of the design verification required is a function of the importance of the package change being made.
- Guidance on Design Verification is contained in AP 05F-001.
- 6.2.8 Technical Review
 - 1. The purpose of a technical review is to ensure that the document or package:
 - a. Is technically adequate, cost effective and responsive to the stated purpose and objective.
 - b. Has been properly developed, documented and reviewed.
 - c. Has been coordinated with other affected sections and/or disciplines and all concerns have been resolved.
 - d. Does not adversely affect the design basis of safety related or special scope SSCs involved.

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	2. The supervisor will make the deter the depth and scope of the technic be and the appropriate groups, dis individuals that should complete a	rmination of what cal review should sciplines and a review.
6.2.9	Pre-Implementation Planning	
	 Following the technical review, bu approval, the Pre-implementation H completed by Engineering for all O The Implementation Coordinator and are identified on this form. RWO required to be completed in suppor package implementation will also k this form, including Post Modifica Essential Drawing updates. [3.2.5, 	at prior to final Planning form is Change Packages. A affected RWOs activities activities of the change be identified on ation Testing and 3.2.7, 3.2.8]
6.2.10	Engineering Approval	
	 Following Pre-implementation plann is submitted for approval. 	ing, the package
	 The Designated Licensed Engineer a packages which require certification has been providing oversight. 	pproves change on and he or she
	 The Engineering Supervisor approve that do not require certification. 	es change packages
	 The Engineering Supervisor approve where the Designated Licensed Engi originator and is certifying his o 	es change packages neer is the or her own work.
	5. Engineering will obtain PSRC appro and then process the completed pac Services to be released. [3.2.10]	oval, if required, kage to Document
6.2.11	Controlled copies of change packages a electronic form by Document Services. electronic media is generally availabl personnel. Implementation is schedule activities controlled through the MPAC	are issued in Access to the to all site and work system.
6.3 Planning (Enginee	g and Implementation of Changes to Contr ering Change Process)	colled SSCs
6.3.1	Planning	
	1. Affected Organizations shall ident	ify all programs,

procedures and training that will require revision

as a result of the Change Package. [3.2.5]

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	a.	The Organization reviewer shall Spare Parts, Warehouse Material Maintenance and Equipment Quali as a minimum when performing the Operations identifies "Essentia	consider the , Preventative fication Programis review. l Reading."
	b.	[3.2.6, 3.2.9 and 3.2.11] This review should be done as so to expedite implementation of the Package. The discovery of any a requiring completion prior to re affected equipment to an operable be brought to the Implementation attention as soon as possible.	oon as practical ne Change additional items eturning the le status should n Coordinator's
	c.	The Organization reviewer then review form (APF 05-005-04) to Timplementation Coordinator.	forwards the the
	d.	The reviewer need not hold the of form until all actions are complete the review is completed. If the completes the action prior to review form, the reviewer shall completion with their initials a completion.	original review leted, only unt e reviewer eturning the indicate its and date of
2	2. Th	e Implementation Coordinator sha	11
	a.	Begin final implementation plan change package requirements and the Change Package Review Forms by the RWOs.	ning based on t the content of being returned
	b.	Determine if additional field we	ork is required
3	3. If Co	no field work is required, the is ordinator:	Implementation
	a.	Generates Supporting SWOs for ea track completion of any remainin identified on the review forms	ach work group ng support work (APF 05-005-04)
	b.	This will allow the supporting a scheduled in the work control pr change package to be closed.	activity to be cocess and the
	c.	Forwards the original Change Pac forms (APF 05-005-04) with the I Supporting SWOs to Document Serv out.	ckage Review list of vices for Close

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	4.	If field work is required the Implementation Coordinator continues with the following.
		 a. Identifies and provides a defined scope of work to all WCNOC organizations needed to provide support.
		b. Functions as the focal point for the implementation of the full scope of the job. All involved WCNOC organizations should keep the IC abreast of all activities performed in support of implementation of the Change Package. The IC should know at all times who needs to do what to complete the implementation in a quality manner.
		c. Works with the RWOs to develop the supporting and implementing work order instructions and sequencing of events. All work groups must coordinate their efforts with the Implementation Coordinator to ensure a quality and timely implementation.
		d. Works with the Integrated Plant Scheduling Group to develop the schedule. The schedule considers the sequence of events and appropriate times for returning SSCs to service. The appropriate logic ties are developed to ensure timely completion of dependent tasks.
6.3.2	Imp	lementation
	1.	All persons shall coordinate their efforts with the Implementation coordinator.
	2.	As work is completed, the Implementation Coordinator ensures that all activities required to be completed prior to releasing the system or portion of the system to Operations, have been completed. [3.2.7]
	3.	This list of activities can be found on the pre- implementation planning form. This form is completed in the final stages of approving the change package and is kept up to date after that through the coordination between Engineering, all the RWOs and the IC.
	4.	Post-Modification Testing is performed at the completion of field work.

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	5.	When a design problem or concern is identified with the Change Package, the Implementation coordinator will generate a WR/WO to initiate an engineering resolution.
6.3.3	Rev	risions to Change Packages
	1.	Revisions to Change Packages must be prepared, reviewed and approved in accordance with the engineering change process. The revision should receive a level of review and approval commensurate with the original change package.
	2.	Revisions may only be made to Change Packages which are not completed. A new Change Package should be initiated for scope changes, rather than continually revising an existing package. Change packages with a significant number of revisions makes the close out process very difficult and inefficient. When developing a new revision, it must be reconciled with all previous revisions and their Engineering screenings/Regulatory reviews to ensure that previous conclusions are not invalidated. Procedure AP 26A-003 should be consulted if it is desired to use a 50.59 Evaluation from a previous Change Package revision. Each revision should clearly state in the objective section as to whether it supplements, partially supersedes or entirely supersedes previous revisions.
	3.	If, during implementation, it is determined that completion of all or a portion of a work package cannot be accomplished the IC will issue an SWO to

- 6.3.4 Close-out
 - CIOSE-OUL
 - 1. When all implementing work has been completed the Implementation Coordinator reviews the package to ensure the following:

Engineering documenting the desired backout configuration in which the field is to be left.

- a. As-built Configuration agrees with Change Package Requirements.
- b. All implementing work and required activities restraining system release to Operations are complete and SSCs restored to designed configuration. [3.2.7]

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		c. RWOs have been contacted to ensure all follow up activities related to affected warehouse material issues have been identified on supporting SWOs. [3.2.9].
		d. All RWO programs (procedures, databases, training, etc.) identified as being impacted, have been updated.
	2.	After implementing activities are complete, the Implementation Coordinator prepares a close-out statement and notifies the applicable engineering group Supervisor that the change package is ready for Engineering close-out.
[NOTE
	Engineering Clos affected documen involve Practice guidance. A Des for those cases.	eout activities that result in changes to ts or incorporation of as-built information may of Engineering. See WCNOC-162 for further ignated Licensed Engineer may need to be assigned
	3.	Engineering's close-out ensures that all drawings, procedures, specifications, calculations, data bases, design basis documents, system and topical notebooks, vendor manuals, etc., affected by the change have been updated. [3.2.9]
	4.	Previously identified affected drawings are reviewed and approved in accordance with AP 05-010 and/or AP 05-003. Affected drawings identified during the close-out process that are administrative issues may also be issued in accordance with these procedures if they do not invalidate the Engineering screenings or regulatory reviews. If these screenings/reviews are affected, a revision must be issued. A revised USAR Change Request may also be issued, in accordance with AP 26B-003, without a revision to the change package if it does not invalidate the Engineering screenings or Regulatory reviews.
	5.	Engineering ensures all close-out activities are complete and prepares a close-out statement.

 Document Service progresses the completed change package to vault.

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NOTE

More likely for new construction and modifications to existing non-controlled SSCs, the services of a Licensed Architect, Surveyor or Landscape Architect may be needed in addition to, or instead of, the Licensed Engineer. Wolf Creek compliance with these statutes, rules, and regulations is further described in WCNOC-162 (PE Handbook).

6.4 Modifications to Non-Controlled SSCs (See ATTACHMENT D)

- 6.4.1 Establish Professional Engineer oversight as needed. Establish the oversight of a Licensed Architect, Surveyor, or Landscape Architect, as needed. Refer to WCNOC-162 for guidance.
- 6.4.2 Modifications to non-controlled SSCs coordinated, designed, planned and implemented in accordance with site processes. <u>IF</u> there are stock items in the warehouse associated with the modified SSC, <u>THEN</u> those items are to be modified also, as applicable. [3.2.9]
- 6.4.3 DCPs or CCPs are not required for changes to noncontrolled SSCs, but may be used.
- 6.4.4 DCPs or CCPs must be used to address changes to controlled SSCs, which are associated with a change to non-controlled SSCs.
- 6.4.5 Coordinate modifications with Systems Engineering (EFIN team) as needed. Installation of new structures or systems, and interfaces with controlled structures and systems should be reviewed with them to determine the need of a change package.
- 6.4.6 Configuration control is maintained for non-controlled SSCs. Engineering documents are to be kept up to date.
 - Identify affected drawings. Initiate changes to affected drawings which are processed per AP 05-010, Design Drawings.
 - Identify affected specifications. Initiate changes to affected specifications which are processed per AP 05-004, SPECIFICATIONS.
 - Identify affected vendor technical documents (VTDs). Initiate changes to affected VTDs which are processed per AI 05C-001, VETIP Process.

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	 Identify affected site procedures, and/training needs. Coordinate ch affected organizations. 	programs hanges with the	
6.4.7	Perform regulatory review in accordance 003, 10 CFR 50.59 REVIEWS, as required.	e with AP 26A-	
6.4.8	As applicable, review the modification controlled SSCs for impact on the follo programs or systems. Coordinate the mo the affected work groups.	As applicable, review the modification to non- controlled SSCs for impact on the following site programs or systems. Coordinate the modification with the affected work groups.	
	• USAR and Operating License		
	• Fire Protection Program		
	• Emergency Plan		
	• Environmental	, i i i i i i i i i i i i i i i i i i i	
	• Security Plan		
	• Underground Utilities		
	• Control Room Habitability		
	• Mixed Radwaste Storage		
	• Gaitronics System		
	 Modifications affecting electrical feeds (e.g., area transformers). modifications which add new breake breaker size. 	loads on primary These would be ers or increase	
	 All applications, additions and cha frequency transmission devices 	anges, to radio	
6.4.9	Design Engineering will approve configue and design changes to boilers built to Section I or Section IV and to pressure to ASME Code Section VIII. (3.1.21)	Aration changes ASME Code e vessels built	

6.4.10 All modifications are to be accomplished in compliance with applicable codes and standards, such as: Uniform Building Code; Uniform Mechanical Code; Uniform Plumbing Code; National Electrical Code; OSHA Standards, etc.

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	6.4.11 Items generally not controlled include:
	 testing and analysis equipment,
	• tools,
	• personal protection equipment,
	 housekeeping tools and supplies,
	 scaffolding and portable ladders,
	• chemicals,
	• storage cabinets,
	 office furnishing, equipment, and cubicles,
	 restroom and shower room plumbing fixtures and accessories including stall panels
	 kitchen and break room plumbing fixtures, appliances, and accessories
7.0	RECORDS
7.1	Forms generated by this procedure are classified as QA records if the Change Package they are associated to is "safety related" or "special-scope". Likewise, the forms are Non-QA records if the Change Package they are associated to is "non-safety related".
7.2	Records generated as a result of other modification procedures, will be governed as specified in appropriate procedure(s).
8.0	FORMS
8.1	APF 05-005-03, "Change Package Index"
8.2	APF 05-005-04, "Change Package Review" [3.2.12]
	- END -



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	ATTACHMEN (Page 1 of CONTROLLED / NON-COM	T D 10) VTROLLED SSC'S
Descrij Sectio	ption and use of the informatior n 6.4, Modifications to Non-Cont	n in this attachment is found in trolled SSCs.
	STRUCTU	RES
ID Number	Controlled	Non-controlled
2001	Auxiliary Bldg and Hot Machine Shop	Doors: 13321
2001	Reactor Bldg	00015. 13521.
2002	Control Bldg	Doors: 33031 33043
Z004	Turbine Bldg	Doors: 43092, 43102, 43122, 43132, 43142, 43151, 43211, 43223.
Z005	Diesel Generator Bldg	
Z006	Fuel Bldg	,
Z007	Radwaste Bldg	Doors: 71143, 71323, 72261, 72264.
Z007A	· · · · · · · · · · · · · · · · · · ·	Radwaste Storage Addition
Z010	Communication Corridor	
Z011	Radwaste Storage	
Z012	Systems: AX, CL, CZ, DC, EW, FQ, HT, PP, SL, UU, WM. All others non-controlled.	Walter P Chrysler Support Complex
Z012A		Walter P Chrysler Support Complex- Shop Bldg
Z012B		Walter P Chrysler Support Complex- Tool Room
Z012C		Walter P Chrysler Support Complex- I&C/Electrical Maintenance Shop
Z013		ESW Chemical Addition
Z015	Systems: RJ, RT, VT	Technical Support Center (TSC)
Z016	Systems: FQ	Olive Ann Beech Operations Administration
Z017	Systems: all controlled systems except KD and HVAC	Charles Evans Whittaker Security Bldg
Z018	ESW Pump House	
Z019	Circulating Water Screenhouse	Doors: CD-01, CD-02, CD-03, CD-04, CD-07, CD-09, CD-10, CD-11, CD-12
Z019A	Systems: all controlled systems except HVAC	Circulating Water Pump Enclosure
Z019B	Systems: all controlled systems except HVAC	Circulating Water Traveling Water Screen Enclosure
Z020	Heating Fuel Oil Storage Tank & Pumphouse	
Z022	Circulating Water Discharge Structure	

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	CONTROLLED / NON-CO	NTROLLED SSC'S
ID Number	Controlled	Non-controlled
7.023	Security Diesel Generator Bldg	
Z024	Systems: CQ, DC, HT, QF, SZ, UU, WL, WM	Makeup Water Screenhouse (MUSH)
Z025A	Systems: CS, FQ, QE	Dwight D Eisenhower Learning Center-Bldg A
Z025B	Systems: FQ	Dwight D Eisenhower Learning Center-Bldg B
Z025C	Systems: FQ	Dwight D Eisenhower Learning Center-Bldg C
Z026	Make-up Water Discharge Structure (MUDS)	
Z027	Meteorological Tower Facility	
Z028	Systems: FO	Dosimetry Bldg
7029		Lube Oil and Chemical Storage Bldg
Z030	Systems: FQ	William Allen White Skills Training Center
Z031	Systems: CQ, SL	Amelia Earhart Materials Center
Z032		Amelia Earhart West Storage Facility
Z033		Vehicle Maintenance
Z034	Systems: FQ	Outage Support Bldg
Z035		Fire Training Facility
Z036	Lime Sludge Pond	
Z037	Systems: HF, PS, SL, WM	Waste Water Treatment Facility
Z038		Carbon Dioxide and Hydrogen Storage Area
Z039		Oxygen and Nitrogen Storage Area
Z040		Dry Cement Storage Tank
Z041		Misc Storage Bldg
Z042	Systems: WM	Chlorine Bldg
Z043	Accelerometer	
Z044		Paint Storage
Z045 ·	Systems: FQ	Paint Shop
Z045A		Waste Paint Solids & Solvents Bldg
Z045B		Paint Shop Breakroom
Z046		Paint Shop Misc Storage
Z047		Hazardous Waste Storage Area
Z047A		Hazardous Waste Support Bldg
Z048		Owens Corning Bldg
Z049		Waste Oil Storage Area
Z051	Main Dam Structure, Saddle Dams, and Baffle Dikes	
Z051A	Systems: CQ, HT, SL, UU, WL	Blowdown Discharge Structure (BDDS)

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	ATTACHMEN	T D
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	CONTROLLED / NON-CON	VTROLLED SSC'S
ID Number	Controlled	Non-controlled
Z052	Systems: CW, WS	Circulating Water Screen House (CWSH) Storage Area
Z053	• • • • • • • • • • • • • • • • • • •	Propane Gas Tank Area
Z054		Anti-Scale Acid Tank and Pump House
Z054A		Biocide Bldg
Z055	Emer Fuel Oil Tank and Access Vault	
Z055A	RWST FDN (Foundation) & Valve House	
Z055B	RMWST FDN (Foundation)	
Z055C	CST (Condensate Storage Tank) FDN (Foundation) & Valve House	
Z055D	Demineralized Water Tank FDN (Foundation)	
Z055E	Water Treatment Tank FDN	
20001	(Foundation) (Comprising 4 inactive	
7.055F	Acid Tank FDN (Foundation) & Berm	
2056	There fairs (Foundactor) a bern	Northwest Laydown Yard Storage Bldg
7056A	• ••• ••• ••• ••• ••• ••• ••• ••• •••	Kelly Bldg #7
2057		Misc Yard Foundations (Crane Pad
		laundry, etc)
Z057A	Main & Unit Aux XMFR Support Structures	
7.057B	Start Up XMFR Support Structures	······································
Z057C	Station Service XMFR Support	
7057D	ESE XMER Support Structures	
Z058		Potable Water Storage Tank &
2059	4 <u>~</u>	Garage
2000	Lake Dam	Garage
1000	NOTE: Includes manmade changes to the lakes capacity, drainage, or foot print.	· · · ·
Z061	Systems: FQ	Arthur Capper OJT Center
Z062		Cable Reel Shop
Z063		New Strawn Warehouse
2065	Ultimate Heat Sink (UHS) Dam & Reservoir	
Z065A	ESW Discharge Structure	
2066A		Charles Curtis Development Center
2066B		Pipe Fab Shop
2069		Administrative Services Shop
2070		Roadways
Z080		Railroads
Z091	Systems: FQ	Ron Evans Outage Processing Center
2092	Systems: FQ	Communications Services / Misc Bldg

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	ATTACHMENT D	
(Page 4 of 10)		
	CONTROLLED / NON-CON	TROLLED SSC'S
ID	Controlled	Non-controlled
Number		
Z093A	ESW Valve House Train A	
Z093B	ESW Valve House Train B	
2094A		Main Gate North Security Bldg
Z094B		Security Search Facility
Z095	Systems: FQ	Edward P McCabe Support Facility
Z096		Acid Tank (Inactive)
Z097		Lakeview and Flinthills Residences
Z100		345 KV Switchyard / Substation
		NOTE: This structure is the
		utility owners scope of
		responsibility. Onsite
		modifications will be coordinated
		with Electrical Design Engineering.
Z101	Systems: FQ	Clyde Cessna Administrative
		Facility
Z102A	ESW Access Vault A1	
Z102B	ESW Access Vault B1	
Z102C	ESW Access Vault A2	
Z102D	ESW Access Vault B2	
Z103	Auxiliary Spillway	
Z104		Sewage Lagoon
Z105	Systems: all controlled systems	Secondary Access
	except KD and HVAC	
Z107		Vehicle Access Station
Z108		Security Weapons Range
Z109		Lake Access Facility
Z110		Water Treatment Bldg
Z111		X-Ray Bldg
Z112		Cathodic Protection Rectifier Bldg
Z113		MUX #2 Bldg

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	ATTACHMEN (Page 5 of	
	CONTROLLED / NON-CON	NTROLLED SSC'S
		IIROLLED SSC S
ID Number	Controlled	Non-controlled
AB	Main Steam System	
AC	Main Turbine System	
AD	Condensate System	
AE	Feedwater System	
AF	Feedwater Heater Extraction, Drains	
	and Vents System	́,
AK	Condensate Demineralizer System	
AL	Auxiliary Feedwater System	
AN	Demineralized Water Makeup Storage	
	and Transfer System	
AP	Condensate Storage and Transfer	
	System	
AQ	Condensate and Feedwater Chemical	
	Addition System	
AX	Acid Feed System	
BB	Reactor Coolant System	
BG	Chemical and Volume Control System	
BL	Reactor Makeup Water System	
BM	Steam Generator Blowdown System	· · · · · · · · · · · · · · · · · · ·
BN	Borated Refueling Water Storage	
	System	
CA	Steam Seal System	-
CB	Main Turbine Lube Oil System	
CC	Generator Hydrogen and Carbon	
	Dioxide System	
CD	Generator Seal Oil System	
CE	Stator Cooling Water System	
CF	Lube Oil Storage, Transfer and	
	Purification System	
CG	Condenser Air Removal System	
CH	Main Turbine Control Oil System	· · · · · · · · · · · · · · · · · · ·
CL	Chlorination System (See KT for	
<u> </u>	Carbon Dioxide System (Soo KU)	
	Plant Sogurity System (Head Doors	Catos: C001 C000
CQ	Soo SK)	Gales: G001, G009
	NOTE: This includes the PAB	
	secondary barrier and the vehicle	
	barrier In addition any	
	modification within the 40 foot	
	isolation zone must address the	
	barriers as part of the	
	modification evaluation	
CR		I&C Shop Compressed Air System
<u> </u>	Communication Systems (See FO. OF	The shop comptessed ATT bystell
	QF)	
CW	Circulating Water System (Yard)	

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	ATTACHMEN'	T D
	(Page 6 OI CONTROLLED / NON-CON	IU) ITROIIED SSC'S
	CONTROLLED / NON COR	
ID Number	Controlled	Non-controlled
CZ	Caustic/handling System	
DA	Circulating Water System (Power Block)	
DC	Battery and DC Distribution System	
DM	Equipment and Floor Drains System (Miscellaneous Buildings)	
DO	Diesel Oil System (See FO, JE, for D.G.)	
DR	Onsite and Offsite Drainage System	
EA	Service Water System	
EB	Closed Cooling Water System	,
EC	Fuel Pool Cooling and Clean-Up System	
ED	Equipment Drains System	
EF	Essential Service Water System	
EG	Component Cooling Water System	
EJ	Residual Heat Removal System	
EL	Site Emergency Lighting DC System	
EM	High Pressure Coolant Injection System	
EN	Containment Spray System	
ΕP	Accumulator Safety Injection System	
EW	Electrical Welding Receptacles System	
FA	Auxiliary Steam Generator System	
FB	Auxiliary Steam System	
FC	Auxiliary Turbines System	
FE	Auxiliary Steam Chemical Addition System	
FO	Fuel Oil System (See DO, JE, for D.G.)	
FP	Fire Protection System (See KC for Power Block) *EOF components will be considered Bechtel System	
FQ	Fiber Optic Communications System (See CS, QE, QF)	
GA	Plant Heating System	
GB	Central Chilled Water System	
GD	Essential Service Water Pump House Building HVAC System	
GE	Turbine Building HVAC System	
GF	Miscellaneous Buildings HVAC System	
GG	Fuel Building HVAC System	
GH	Radwaste Building HVAC System	
GK	Control Building HVAC System	
GL	Auxiliary Building HVAC System	

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ATTACHMENT D (Page 7 of 10) CONTROLLED / NON-CONTROLLED SSC'S ID Controlled Non-controlled Number GM Diesel Generator Building HVAC System GN Containment Cooling System GΡ Containment Integrated Leak Rate Test System GR Containment Atmospheric Control System GS Containment Hydrogen Control System \mathbf{GT} containment Purge HVAC System GV CRDM Cavity Cooling System GΧ Grounding and Cathodic Protection System ΗA Gaseous Radwaste System Liquid Radwaste System ΗB Solid Radwaste System HC Decontamination System HD ΗĒ Boron Recycle System ΗF Secondary Liquid Waste System ΗT Heat Tracing System Hoists, Cranes, Elevators and ΗХ Manlifts System Hydrogen System (See KH) ΗY Emergency Fuel Oil System (See DO, JΕ FO, Non-Emerg) KA Compressed Air System Breathing Air System KB KC Fire Protection System Power Block (See FP for Site) KD Domestic Water System (See WD) Fuel Handling, Fuel Storage and KE Reactor Vessel Service System KF Cranes, Hoists, and Elevators System KH Service Gas System (CO $_{\odot}$, N $_{2}$, H $_{2}$, and O_{2}) (See CO, NR, NT, HY, OX) KJ Standby Diesel Engine System KL MMO Service Air System ΚT Essential Service Water Chlorination System (See CL) LA Sanitary Drainage System LΒ Roof Drains System LC Yard Drainage System LD Chemical and Detergent Waste System LEOily Waste System Floor and Equipment Drains System LF

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	ATTACHMENT I)	
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CONTROLLED / NON-CONTROLLED SSC'S			
ID Number	Controlled	Non-controlled	
LL	Lighting System (See QA)		
LΡ	Lighting Panel System		
LV	Low Voltage Auxiliary Power System		
MA	Main Generation System (Includes Main Generator, Iso-Phase Bus, Unit Auxiliary Transformer, Main Transformer Line to Switchyard,		
MB	Generator Breaker) Excitation and Voltage Regulation System		
MR	Startup Transformer System		
MT	Shop Bldg Machine Tool Power Supply System		
NB	Lower Medium Voltage System - 4.16 kV (Class IE Power System)		
NĒ	Standby Generation System		
NF	Load Shedding and Emergency Load Sequencing System		
NG	Low Voltage System - 480 V (Class IE Power System)		
NK	125 V DC System (Class IE Power System)		
NN	Instrument AC Power System - 120 V (Class IE Power System)		
NR	I&C Shop Nitrogen System (See KH, NT)		
NT	Nitrogen System (See KH, NR)		
OX	Oxygen System (See KH)		
PA	Higher Medium Voltage System - 13.8 kV		
PB	Lower Medium Voltage System - 4.16 kV (Non-Class IE Power System)	·····	
PG	Low Voltage System - 480 V (Non- Class IE Power System)		
PJ	250 V DC System 9Non-Class IE Power System)		
ΡK	125 V DC System (Non-Class IE Power System)		
PK	Local Instrument Panels	· · · · · · · · · · · · · · · · · · ·	
PM	Main Control Room Panels		
PN	Instrument AC Power System (Non- Class IE Power System)		
PP	Power Panel System		
PQ	Uninterruptible AC Power System (Part of RJ System)		
PS	Site Power Loop System	B)	

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	ATTACHMEN	T D
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	CONTROLLED / NON-CON	TROLLED SSC'S
ID	2	
Number	Controlled	Non-controlled
QA	Normal Lighting System (Includes	
OB	Standby Lighting AC System	
	Emergency Lighting DC System	
OF	Telephone System (See CS, FO, OF)	
QF	Public Address System (Intercom)	
QG	Grounding System (Power Block Ground Grid - Personnel Safety)	
ОН	Cathodic Protection System	
O.J	Freeze Protection System	
ON	Miscellaneous Equipment System	
RC	Radiation Chemistry Computer System	
RD	Meteorological Instrumentation	
RG		Administration and Shop Buildings HVAC Refrigeration System (See VS,
		VV)
RJ	Balance of Plant Computer System	
RK	Plant Annunciator System	
RL	Main Control Board	
RM	Process Liquid Sampling and	
	Analysis System	
RN	NSSS Computer System	
RP	Miscellaneous Control Panels	
RR	Radioactive Release Information System and/or Safety Assessment System	
RT	Emergency Response Facility	
	Information System (ERFIS)	
RU	Site Computers I&C Shop (Main	
	Frame)	
RZ		Alert and Notification System
SA	Engineered Safety Features	
SR	Reactor Protection Systems	·····
SC	Reactor Instrumentation System	
SD.	Area Radiation Monitoring System	
SE	Ex-Core Neutron Monitoring System	·
SF	Reactor Control System	· · · · · · · · · · · · · · · · · · ·
SG	Seismic Instrumentation System	
<u>сн</u>	Post-Accident Monitoring System	
 	Nuclear Sampling System	
SK	Power Block Plant Security System	
с'т	Auviliary Dowon System	
L	LAUXILIALY POWEL SYSTEM	· · · · · · · · · · · · · · · · · · ·

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	ATTACHMEN	T D
	(Page 10 of	5 10)
	CONTROLLED / NON-CON	TROLLED SSC'S
ID	Controlled	Non-controlled
Number		
SM	Containment Insulation	· · · · · · · · · · · · · · · · · · ·
SP	Radiation Monitoring System	
SQ	Loose Parts Monitoring System	
<u></u>	In-Core Neutron Monitoring System	
SS	Anticipated Transient w/o Scram	
	Mitigations Circuitry System	
	(AMSAC)	· · · · ·
51	Sewage Treatment System	
<u></u>	Screen wash System	
<u> </u>	Switchyard System	
SZ	Service Air System	Shop Blag Air Compressors located
TTT7	Current control Control	ти втад 7015
<u> </u>	Supervisory Control System	
VA		Isc Shop HVAC System
<u></u>		1&C Shop Computer Room HVAC System
VC		Realth Physics Computer Room HVAC
	· · · · · · · · · · · · · · · · · · ·	System
		Education Center HVAC
VH		Circulating water and Makeup water
		Screenhouse vent System
VU		Vort System
VI	· · · · · · · · · · · · · · · · · · ·	Shop Building HVAC System (See RG)
V		Vobicle Maintenance Fuel System
VPI		Administration Building HVAC System
0.0		(See RG)
VT	Tech Support System HVAC	(566 10)
		Shop Building Water Treatment Area
v v .		Vent System
VW		Waste Water Treatment Ventilation
 WD	Domestic Potable Water System (See	
	KD)	
WG	Gland Water and Motor Cooling Water	
	System	
WL	Cooling Lake Makeup Water and	
	Blowdown System	
WM	Makeup Demineralizer System	
WS	Plant Service Water System	
WT	Waste Water Treatment	
₩Z	Radioactive Liquid Release System	
XX	Multi-Systems or Buildings Affected	
	by Mod System	
ZX	Reactor Building	
-	Equipment/Personnel Hatch System	

- END -