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Title/Desc:

200 AREAS EFFLUENT BAT AKART IMPLEMENTATION  
PROJECT SPECIFIC QA PLAN W-291

15

STA 4  
APR 15 1993

ENGINEERING DATA TRANSMITTAL

1. EDT 140768

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) Effluent Treatment and Laboratory Projects	4. Related EDT No.:
5. Proj./Prog./Dept./Div.:	6. Cog. Engr.:	7. Purchase Order No.:
W-291	K. S. Pedersen	N/A
8. Originator Remarks:	9. Equip./Component No.:	10. System/Bldg./Facility:
	N/A	N/A
11. Receiver Remarks:	12. Major Assm. Dwg. No.:	13. Permit/Permit Application No.:
	N/A	N/A
	14. Required Response Date:	

15. DATA TRANSMITTED									
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Impact Level	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition	
1	WHC-SD-W291-QAPP-001		0	Project Specific Quality Assurance Plan	3 ESQ	1	1		

16. KEY									
Impact Level (F)		Reason for Transmittal (G)				Disposition (H) & (I)			
1, 2, 3, or 4 (see MRP 5.43)		1. Approval 2. Release 3. Information		4. Review 5. Post-Review 6. Chk. (Receipt Acknow. Required)		1. Approved 2. Approved w/comment 3. Disapproved w/comment		4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged	

17. SIGNATURE/DISTRIBUTION (See Impact Level for required signatures)											
(G)	(H)	(I) Name (K) Signature (L) Date (M) MSIN								(G)	(H)
Reason	Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	Reason	Disp.
1	1	Cog. Eng. K. S. Pedersen	<i>[Signature]</i>	3/18/93	R3-35						
1	1	Cog. Mgr. D. P. Hughes	<i>[Signature]</i>	3/18/93	R3-35						
1	1	QA B. H. McGillicuddy	<i>[Signature]</i>	3/18/93	S1-56						
1	1	Safety M. N. Islam	<i>[Signature]</i>	3/18/93	R3-08						
1	1	Env. W. R. Brown	<i>[Signature]</i>	3-8-93	R3-21						
1	1	M. C. Arntzen	<i>[Signature]</i>	3-1-93	L4-95						

18. Signature of EDT Originator <i>[Signature]</i> Date 3/18/93	19. Authorized Representative for Receiving Organization <i>[Signature]</i> Date 3/18/93	20. Cognizant/Project Engineer's Manager <i>[Signature]</i> Date	21. DOE APPROVAL (if required) Ltr. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
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**ENGINEERING DATA TRANSMITTAL**

<b>2. To: (Receiving Organization)</b> Distribution	<b>3. From: (Originating Organization)</b> Effluent Treatment and Laboratory Projects	<b>4. Related EDT No.:</b> N/A
<b>5. Proj./Prog./Dept./Div.:</b> W-291	<b>6. Cog. Engr.:</b> K. S. Pedersen	<b>7. Purchase Order No.:</b> N/A
<b>8. Originator Remarks:</b> This Quality Assurance Project Plan (QAPP) identifies the Westborough Hanford Co. (WHC) Quality Assurance (QA) program requirements for all contractors involved in the planning and execution of the design, construction, testing and in specialty of the 200 Area Effluent S&T/AN&RT Implementation, Project W-291.		<b>9. Equip./Component No.:</b> N/A
<b>11. Receiver Remarks:</b>		<b>10. System/Bldg./Facility:</b> N/A
		<b>12. Major Assm. Dwg. No.:</b> N/A
		<b>13. Permit/Permit Application No.:</b> N/A
		<b>14. Required Response Date:</b>

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Impact Level	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-W291-QAPP-001		0	Project Specific Quality Assurance Plan	3 ESQ	1	1	

**KEY**

Impact Level (F)	Reason for Transmittal (G)	Disposition (H) & (I)
1, 2, 3, or 4 (see MRP 5.43)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Impact Level for required signatures)											
(G)	(H)	17. SIGNATURE/DISTRIBUTION (See Impact Level for required signatures)						(G)	(H)		
Reason	Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	Reason	Disp.
	I	Cog. Eng. K. S. Pedersen		3/1/93	R3-35	PROJECT FILES		3/1/93	R1-28	3	3
	I	Cog. Mgr. D. P. Hughes		3/1/93	R3-35	CENTRAL FILES		3/1/93	A3-88	3	3
	I	QA B. H. McGillicuddy		3/1/93	S1-54			3/1/93			
	I	Safety M. N. Islam		3/1/93	R3-08			3/1/93			
	I	Env. W. R. Brown		3/1/93	R8-21			3/1/93			
	I	M. C. Arntzen		5-1-93	L4-95			5-1-93			

<b>18.</b>  Signature of EDT Originator	<b>19.</b>  Authorized Representative for Receiving Organization	<b>20.</b>  Cognizant Project Engineer's Manager	<b>21. DOE APPROVAL (if required)</b> Ltr. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
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**SUPPORTING DOCUMENT**

1. Total Pages *19*

2. Title  
200 Areas Effluent BAT/AKART Implementation,  
Project-Specific Quality Assurance Plan, W-291

3. Number  
WHC-SD-W291-QAPP-  
001

4. Rev No.  
0

5. Key Words  
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6. Author  
Name: K. S. Pedersen  
*Kenneth S. Pedersen*  
Signature  
Organization/Charge Code 24380/A2HW1

**APPROVED FOR  
PUBLIC RELEASE**

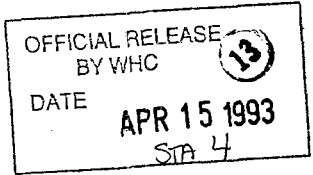
7. Abstract  
This Quality Assurance Project Plan identifies the Westinghouse Hanford Company Quality Assurance program requirements for all contractors involved in the planning and execution of the design, construction testing and inspection of the 200 Area Effluent BAT/AKART Implementation, Project W-291.

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10. RELEASE STAMP



9. Impact Level *3ESQ*

PROJECT SPECIFIC QUALITY ASSURANCE PLAN

PROJECT W-291

200 AREA EFFLUENT BAT/AKART IMPLEMENTATION

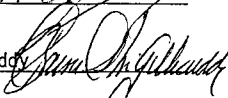
Issued By:  
Westinghouse Hanford Company  
Richland, Washington

February 13, 1993

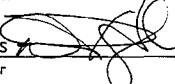
For:  
U.S. Department of Energy  
Richland Operations Office  
Richland, Washington

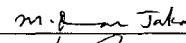
WHC Approvals:


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Date

W.R. Brown   
Regulatory Manager 3-8-93  
Date

DOE RL Approval:

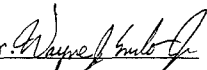
W.J. Evelo, Jr.   
Projects Branch 3/31/93  
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## 1.0 SCOPE

- 1.1 This Quality Assurance Project Plan (QAPP) identifies the Westinghouse Hanford Co. (WHC) Quality Assurance (QA) program requirements for all contractors involved in the planning and execution of the design, construction, testing and inspection of the 200 Area Effluent BAT/AKART Implementation, Project W-291. This plan provides direction for the types of verifications necessary to satisfy the functional requirements within the project scope as determined in the Project Functional Design Criteria (FDC), WHC-SD-W-291-FDC-001 Rev.0.
- 1.2 The project shall provide the necessary systems, components, structures, including portions of process systems and modifications to existing facilities necessary to ensure that the six waste streams from the four facilities identified in the FDC, are environmentally acceptable for discharge to the 200 Area TEDF (Project W-049H). The sampling, monitoring and control systems will be provided by the generating facilities, 200 Area ETF (Project C-018H) and 200 Area TEDF (Project W-049H). The project shall also include the necessary utilities, communications, fire protection, and site improvements required to make the project operational as required to comply with the FDC, as well as comply with applicable DOE Orders, local, state, and federal codes, regulations, statutes, and standards.
- 1.3 DOE Order 6430.1A, General Design Criteria, Division 1, Section 0140, prescribes the quality assurance requirements the facility design shall be conducted under to ensure that the established program and projects quality objectives are satisfied.
- 1.4 The safety classification shall be determined by analysis in accordance with DOE Order 6430.1A, Section 1300.3. Currently per WHC safety classification criteria and methodology, there are no safety class 1 or 2 items identified in this project and safety class 3 is the highest classification identified in the Preliminary Safety Evaluation. All safety class 1 or 2 items identified during design and safety analysis are to be documented in a Safety Analysis Report and this QAPP shall be revised to support those changes.
- 1.5 This is not a QAPjP as defined in the Environmental Protection Agency (EPA) requirements contained in: "Guidelines and Specifications for Preparing Quality Assurance Program Plans", (QAMS-004/80) and "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans", (QAMS-005/80) do not apply to the construction phase of this project. Those requirements that apply are addressed in the WHC Environmental Compliance Manual WHC-CM-7-5 and shall be implemented during the operational phase of this project. The requirements contained in "Construction Quality Assurance for Hazardous Waste Land Disposal Facilities", (EPA/530-SW-86-031) also does not apply to this project and any applicable requirements with interfacing projects shall be provided by the interfacing project.

## 2.0 RESPONSIBILITIES

- 2.1 The Operating Contractor (OC) Cognizant Quality Engineer is responsible for the review and approval of all quality related documentation, as well as the surveillance, of all quality related activities for the project design, fabrication and construction, including project procurement.
- 2.2 Acceptance Inspection (AI) for government acceptance is to be performed by Kaiser Engineers Hanford (KEH) who is responsible for the performance of acceptance inspection and overview on all construction activities. AI shall ensure timely and accurate reporting of all nonconformances at the time of their occurrence, completion and approval of all verification and acceptance documentation at the time of it's performance, and submittal to the OC prior to project closeout.
- 2.3 The Engineer/Constructor (E/C) is responsible for the adequacy of the project design and for ensuring that the applicable quality requirements, as defined in this plan, are included in the project drawings, specifications and other approved project documents. The E/C is also responsible for transmitting the applicable quality requirements on to their subcontractors. If the E/C determines it necessary to expand or delete the quality requirements of this plan, all changes shall be approved by the OC Cognizant Quality Engineer.
- 2.4 Construction Management (CM), for the overall project, is to be performed by KEH who is responsible for ensuring that the contractor(s) meet their contract obligations as identified in the drawings, specifications, and other approved project documents. In addition CM shall serve as contract coordinator for quality activities during construction and procurement to assure compliance is attained.
- 2.5 The Construction Contractor(s) (CC) and their subcontractor(s) are responsible for performing the quality verification activities as specified within the guidelines of their contract as identified in the referenced drawings, specifications and other approved project documents. All contractors and subcontractors are responsible for the quality requirements that are applicable to their portion of the contract and each contractor is responsible for transmitting the applicable quality requirements on to their subcontractors.



### 3.0 QUALITY ASSURANCE PROGRAM REQUIREMENTS

- 3.1 The design, procurement, construction, fabrication, inspection and testing activities shall conform to the quality assurance/quality control provisions of the codes and standards specified in the approved project documents.
1. The Criteria for Safety Classes (Attachment 1) of systems, components, and structures is the basis for the requirements of this plan and shall be used in design and construction as the basis for determining WHC quality assurance program requirements.
  2. The Project Critical Characteristics (Attachment 2) denotes the safety class and types of inspections required for each system, component, or structure being designed within the scope of the project. The characteristics are listed in the CSI, MASTERFORMAT referenced in the DOE Order 6430.1A, Section 0101-3. The Comments section provides references to suggested codes or standards to be used for direction to determine the types of inspections and tests to be performed.
  3. The Description of Types of Inspection (Attachment 3) is a detailed description of the types of inspections to be performed during the execution of construction. This description for Title III inspection is reproduced verbatim from DOE Order 4700.1, Chapter V, Part C, Paragraph 3.c.(3)(c) as required in the WHC QAPP Format, Appendix QI 2.1-A.
  4. The Quality Assurance Program Index (Attachment 4) is provided to show the relationship of WHC QA Program manual implementing procedures and other WHC manual implementing procedures to ASME NQA-1 basic requirements, supplements and appendices. Revisions are not shown in this index as it is a reference list to show relationships and is not a requirements list of mandatory procedures. These requirements are established in the Project FDC.
  5. The procurement of engineered items shall include the requirement for suppliers to have a quality assurance program consistent with the applicable features of this plan. The procurement of commercially available items (e.g. ANSI, ASTM, UL, NEMA, etc.) and items ordered from a manufacturer or supplier by catalog or part number for unaltered installation may be procured through commercial sources using standard procurement practices.

- 3.2 The AI shall have the responsibility for overall quality activities and related documentation on the construction project, as defined in the existing KEH AI Quality Assurance Program requirements. Their inspection and overview activities shall determine project acceptance based on the requirements established in the drawings, specifications, and other approved project documents.
1. The AI shall identify, in an Acceptance Inspection Plan (AIP), hold and witness points, as appropriate, based on the project design. These points shall take into consideration, as a minimum, construction activities that cannot be inspected or verified at a later date.
  2. The AI shall identify significant conditions adverse to quality, identified through inspection activities, review of nonconformance reports, and audits. These items shall be formally tracked and Corrective Action Reports (CARs) issued where warranted.
- 3.3 The E/C shall establish a quality assurance program that satisfies the requirements of DOE Order 6430.1A, Section 0140, "Quality Assurance", that is preferably organized on the basis of ASME NQA-1-1989, "Quality Assurance Program Requirements for Nuclear Facilities" to the degree required in the project documents. The design drawings, specifications and other approved project documents shall establish the specific requirements and identify the specific responsibilities.
1. Submit a Quality Assurance Plan (QAP) that meets the requirements of the specific quality assurance features identified in the project documents for both home office and field implementation. Furnish an index that cross references the QAP with the corresponding quality assurance features identified in the project documents.
  2. Submit an Inspection Plan (IP) that meets the inspection requirements of the specific technical sections of the project documents, and includes an Inspection List (IL) of inspections and tests to be performed and by whom for both on site and off site (at the vendor's facility) inspection and testing.
  3. Submit a Recommended Inspection List (RIL), to be as input used by the AI in preparing the Government Acceptance Inspection Plan (AIP), that includes recommended inspection, hold and witness points not typically included in first line inspections, or required by codes and standards.

- 3.4 The E/C shall establish a quality assurance program on design and procurement activities, which includes and documents the quality requirements necessary to accomplish the project quality objectives. In addition, or where not covered by the referenced codes and standards, the following quality assurance features shall be established.
1. Design and Procurement Document Control: Design and procurement documents shall be independently verified for conformance to the requirements of the approved project documents by individual(s) within the design organization who are not originators of the document. Changes to these documents shall be verified or controlled to maintain conformance to the approved project documents.
  2. Control of Purchased Material, Equipment and Services: Measures shall be established to ensure that suppliers of material, equipment, and construction services are supplying these items to the quality specified in the procurement documents. This may be done by an evaluation or survey of the supplier's products and facilities.
  3. Handling, Storage, and Shipping: Instructions shall be provided in procurement documents to control the handling, storage, shipping, and preservation of material and equipment to prevent damage, deterioration, and reduction of cleanliness.
- 3.5 The E/C shall establish a quality assurance program on construction activities that satisfies and documents the project quality assurance requirements. In addition, or where not covered by the referenced codes and standards, the following quality assurance features shall be established.
1. Inspection: In addition to required code instructions, a program for inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity. This shall include the visual inspection of components prior to installation for conformance with procurement documents and the visual inspection of items and systems following installation, cleaning, and passivation (where applied).
  2. Inspection, test, and operating status: Measures shall be established to provide for the identification of items which have satisfactorily passed required inspections and tests.
  3. Identification and Corrective Action for items of Nonconformance: Measures shall be established to identify items of nonconformance with regard to the requirements of the procurement documents or applicable codes and standards and to identify the remedial action taken to correct such items.

- 3.6 The E/C may perform full or partial inspection and testing functions on construction activities, utilizing E/C inspection personnel and/or CC inspection personnel. The design drawings, specifications and other approved project documents shall establish specific requirements and identify specific responsibilities.
- 3.7 The CC(s) and their subcontractor(s) shall plan, perform and document the inspections and tests as specified in the contract and detailed in the drawings and specifications using specifically approved instructions or procedures as identified in the drawings, specifications and other approved project documents for quality verification, inspection, and testing activities.

#### 4.0 QUALITY INDEX OF IMPLEMENTING PROCEDURES

- 4.1 The OC has an established quality assurance program that complies with DOE Order 5700.6C, "Quality Assurance", that is based on ASME NQA-1, "Quality Assurance Program Requirements for Nuclear Facilities". A quality index of OC implementing procedures is provided in Attachment 4 to show the relationship of WHC manuals and implementing procedures to ASME NQA-1.
- 4.2 The E/C, CC(s), and their subcontractor(s) engaged in the activities of design verification, inspection and acceptance of project systems, components and structures shall submit an index or description of the implementing procedures within their quality planning documents to the OC for review to show compliance with project requirements.
- 4.3 The OC shall review these indexes and implementing procedures for conformance and adequacy. These will provide the basis for technical reviews, surveillances, and audits of project activities to assure compliance to project requirements.

### CRITERIA FOR IMPACT LEVELS AND SAFETY CLASSES

The basis for establishing Quality Assurance program requirements is the Impact Level and Safety Classification procedures detailed in WHC-CM-1-3, Management Requirements and Procedures, MRP 5.43, "Impact Levels" and MRP 5.46, "Safety Classification of Systems, Components, and Structures."

1. WHC Impact level and approval requirements of all WHC information documents important to safety, quality, or environmental shall be determined in accordance with the system defined in MRP 5.43. The impact level shall be entered in the approval section of the document. Impact level 1, 2, or 3, documents shall have the approval requirements appended with the appropriate combination of "E" environmental, "S" safety, and "Q" quality, e.g., impact level 3, approved by Environmental and Quality, becomes 3EQ. Additional requirements for approval of documents may be specified in project, program, or division/department implementing procedures.
2. WHC Safety Classification of items provides criteria and methodology for a graded approach to applicable design and quality assurance requirements as required by DOE Order 6430.1A, Section 1300-3, Safety Class Criteria. This graded approach assigns requirements to items commensurate with the function of each system, component, and structure in preventing or mitigating the consequences of hazards and postulated design basis accidents. In the process of determining the detailed quality requirements for WHC safety classification of items, the consequences of failure and complexity of the items should be considered.

#### Safety Classification Notes:

1. The safety class 1, 2, and 3 definitions in the DOE Order 6430.1A, Abbreviations and Glossary section are not used to implement the WHC safety classification system and are not equivalent to the WHC safety classification categories.
2. The WHC Industrial Safety, Nuclear Safety, Environmental Protection, and Quality Assurance programs do not apply to nonsafety class 4 items.

A summary of WHC safety class 1, 2, 3, and nonsafety class 4 description of applications is included in the following paragraphs.

1. Safety Class 1 addresses the health and safety of the public and the environment. This classification is applied to systems, components, and structures, including portions of process systems, whose failure could cause undue risk or exposure to the health and safety of the public and the environment. A comprehensive QA program that meets all applicable provisions of ASME NQA-1 shall be used to control all WHC safety class 1 items.
2. Safety Class 2 addresses onsite worker health and safety and the environment. This classification is applied to systems, components, and structures, including portions of process systems, (not defined as safety class 1 above), whose failure could adversely affect onsite worker health and safety, and the environment. A graded approach shall be used to apply QA program requirements to WHC safety class 2 items in accordance with MRP 5.2, "Quality Assurance," the Quality Assurance Manual, WHC-CM-4-2, and MRP 5.43.
3. Safety Class 3 addresses the health and safety of facility workers and radioactive, chemical, or thermal releases to the environment. This classification is applied to systems, components, and structures, including portions of process systems, (not defined as safety class 1 or 2 above), whose failure could effect the health and safety of facility workers and cause an unanticipated radioactive, chemical, or thermal release to the environment. As a minimum, conventional industrial standards (National Electrical Code, National Fire Protection Association Codes, Military Standards, etc.) shall be applied to WHC safety class 3 items.
4. Nonsafety Class 4 has no significant importance to health, safety, or environmental protection. This classification is applied to systems, components, and structures whose failure has no significant importance to health, safety, or environmental protection. The WHC QA program does not apply to WHC nonsafety class 4 items.

PROJECT CRITICAL CHARACTERISTICS LIST						
Item	Description of Systems, Components, and Structures	Safety	Type of Inspection			Comments
			F	G	D	
-	SITWORK	-	-	-	-	DIVISION 2
1	Earthwork, Structures	3		X		WSDOT M41-10 Insp.& Test Req.
2	Earthwork, Utilities	3		X		WSDOT M41-10 Insp.& Test Req.
3	Earthwork, Pavement	3		X		WSDOT M41-10 Insp.& Test Req.
4	Asphaltic Concrete Paving	3		X		WSDOT M41-10 Insp.& Test Req.
5	Utility Structures	3		X		WSDOT M41-10 Insp.& Test Req.
6	Piped Utilities	3		X		WSDOT M41-10 Insp.& Test Req.
7	Sewerage Systems	3		X		WSDOT M41-10 Insp.& Test Req.
8	Chem Proc Wastewater Sys	3			X	Per LOI To Meet Env.& Saf.Req.
9	Communication Transmission	3	X	X		Mfgr.Inst.& Insp.Req./ATP Req.
10	Chain Link Fences & Gates	3		X		Federal Specifications
-	CONCRETE	-	-	-	-	DIVISION 3
1	Reinforcing Steel	3		X		ACI 301 Insp.& Test Req.
2	Cast-in-place Concrete	3		X		ACI 301 Insp.& Test Req.
3	Pre-cast Concrete	3		X		ACI 301 Insp.& Test Req.
4	Grout	3		X		Mfgr.Inst.& Insp.Req.
-	METALS	-	-	-	-	DIVISION 5
1	Metal Fabrications	3		X		AWS D1.1 & D1.3 Insp.& Test Req.
2	Expansion Anchors	3		X		SDC 4.2 Inst. & Insp.Req.
-	THERM. & MOIST. PROTECT.	-	-	-	-	DIVISION 7
1	Joint Sealers	3		X		Mfgr.Inst.& Insp.Req.
-	FINISHES	-	-	-	-	DIVISION 9
1	Special Protective Coating	3			X	Mfgr.Inst.& Insp.Req.+Appd.Proc.
2	Painting	3		X		Mfgr.Inst.& Insp.Req.



PROJECT CRITICAL CHARACTERISTICS LIST						
Item	Description of Systems, Components, and Structures	Safety	Type of Inspection			Comments
			F	G	D	
-	SPECIAL CONSTRUCTION	-	-	-	-	DIVISION 13
1	Radiation Protection	3			X	Per Spec.To Meet Env.& Saf.Reg.
2	Pre-Engineered Structures	3		X		Mfgr. Inst.& Insp. Req.
3	Process Control Systems	3	X		X	Mfgr. Inst.& Insp. Req./ATP Req.
4	Recording Instrumentation	3	X		X	Mfgr. Inst.& Insp. Req./ATP Req.
5	Monitoring & Control System	3	X		X	Mfgr. Inst.& Insp. Req./ATP Req.
6	Alarm & Detection Systems	3	X		X	Mfgr. Inst.& Insp. Req./ATP Req.
-	MECHANICAL	-	-	-	-	DIVISION 15
1	Mechanical Insulation	3		X		Mfgr.Inst.Req./Meet Safety Req.
2	Steel Pres Vessels > 15 PSI	3			X	ASME Sct.VIII Cd.Stmp & Ntl.Reg.
3	Steel Tanks < 15 PSI	3		X		API 620/650 Insp.& Test Req.
4	Fbr-Rein Pres Ves > 15 PSI	3			X	ASME Sct.X Code Stmp & Ntl.Reg.
5	Fiberglass Tanks < 15 PSI	3		X		ASTM D3299/D4097+D2563+MET.DIV.5
6	Polyprop Tanks < 15 PSI	3		X		Typ Ind Test (Low Tmp Drop Test)
7	Chem Proc Sys Met Pipe	3			X	ASME B31.3 Nml.Svc.Cat.Reg.
8	Chem Proc Sys Non-Met Pipe	3			X	ASME B31.3+Ch.7 Nml.Svc.Cat.Reg.
9	Building HVAC Systems	3	X	X		SMACNA Insp.& Test Req./Air Bal.
10	Air Controls & Inst.	3			X	Mfgr.Inst.& Insp.Reg./ATP Req.
-	ELECTRICAL	-	-	-	-	DIVISION 16
1	Medium Voltage Dist.Systems	3	X	X		NFPA 70 Insp.& Test Req.
2	Service & Dist.Systems	3	X	X		NFPA 70 Insp.& Test Req.
3	Lighting Systems	3		X		NFPA 70 Insp.& Test Req.
4	Cathodic Protection Systems	3	X	X		Mfgr.Inst.& Insp.Reg./ATP Req.
5	Alarm & Detection Systems	3	X		X	Mfgr.Inst.& Insp.Reg./ATP Req.
6	Voice & Data Systems	3	X	X		Mfgr.Inst.& Insp.Reg./ATP Req.

## DESCRIPTION OF TYPES OF INSPECTION

Types of Inspection. Because of the variety of types of contracts and subcontracts and the degree of responsibility assigned to the operating contractors, the architect-engineer, the construction contractors, and individual vendors; specific rules covering all phases of inspection can not be prescribed. In general, inspection activities are divided into three types--functional, general, and detailed--as described below:

1. Functional Inspection is performed to determine overall compliance with contract drawings and specifications. It may vary from inspection of minor items to extensive testing of operating equipment (which must be provided for in the contract). It may also serve in making initial determination of the adequacy of the design effort. The field element and the operating contractor participate in functional inspections from the viewpoints of owner and user.
2. General Inspection is the fundamental and comprehensive inspection to ascertain that workmanship and kind and quality of materials conform to the contract specifications.
3. Detailed Inspection includes, but is not limited to, verification of details, such as checking location and size of reinforcing bars, maintaining records of concrete batching plant operations, verifying the use of proper welding rods, checking riveting and welding, and performing other inspection for quality assurance purposes. It starts with initial construction operations and extends through all construction stages.

### Critical Characteristics List Notes:

1. The Type of Inspection section in Attachment 2 and the "F" "G" "D" found there is described here in Attachment 3. This is the description for Title III inspection reproduced verbatim from DOE Order 4700.1, Chapter V, Part C, Paragraph 3.c.(3)(c) as required in the WHC QAPP Format, Appendix QI 2.1-A.
2. The Comments section in Attachment 2 provides references to suggested codes or standards to be used for direction to determine the types of inspections and tests to be performed.
3. The Description section in Attachment 2 is organized using the CSI, MASTERFORMAT system referenced in DOE Order 6430.1A, Section 0101-3, Organization and Use of These Criteria.

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QUALITY ASSURANCE PROGRAM REQUIREMENT TITLE	*** IMPLEMENTING PROCEDURES						
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			** QA	Admin	Eng	Proj	Env
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QA Program Planning Project Type Activities	1	NQA-1(2) 2A-2	QI 2.1	CM-1-3 MRP 6.2	CM-6-1 EP 1.12	CM-6-2 Pt.1.0	CM-7-5 Pt Q
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Qualification of Audit Personnel	2 & 10	NQA-1(2) 2S-3 2A-3	QAI 2.3				
Qualification of NDE Personnel	2	NQA-1(2) 2S-2	QI-2.6 CM-4-39				
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Design Verification Overview	6		QAI 3.1		CM-6-1 EP 4.1		
Software QA Requirements	4	NQA-2 Pt 2.7	CM-4-2 QR 19.0		CM-6-1 EP 2.1		
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External Services Control	7		QI 4.2				
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QUALITY ASSURANCE PROGRAM REQUIREMENT TITLE	*** IMPLEMENTING PROCEDURES						
	DOE 5700.6C CRITERION	NQA-1 & 2 (Reqs), Sup & App	WHC CM MANUALS				
			** QA	Admin	* Eng	Proj	Env
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QUALITY ASSURANCE PROGRAM INDEX							
QUALITY ASSURANCE PROGRAM REQUIREMENT TITLE	*** IMPLEMENTING PROCEDURES						
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			** QA	Admin	*Eng	Proj	Env
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QUALITY ASSURANCE PROGRAM INDEX							
QUALITY ASSURANCE PROGRAM REQUIREMENT TITLE	***IMPLEMENTING PROCEDURES						
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			**QA	Admin	*Eng	Proj	Env
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\*\*\* Revisions are not shown in this index as it is a reference list to show relationships and is not a requirements list of mandatory procedures. These requirements are established in the Project FDC.

\*\* Quality Instructions, (QI)'s, are found in the Level II Quality Assurance Manual WHC-CM-4-2. Quality Assurance Instructions, (QAI)'s, are found in the Level III Quality Assurance Instructions Manual WHC-CM-4-8.

\* Additional reference guidance of EP's and other engineering documents that address QA requirements is provided in Table 2 of EP-1.0, found in the Level II Standard Engineering Practices Manual WHC-CM-6-1.

Date Received:

APR 15 1993

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WHC-CM-3-4

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EDT No.: 140768

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