(10-17-MRR)

10

Pullman Power Products		ESD 269 DOCUMENT NO.
PREPARED BY: R.L. Fisher	APPROVED BY: J.P. Runyan	ISSUE DATE: 8-14-78
REV. 2-9-82 R. Llewellyn	TO BE USED ONLY ON JOB #7177	PAGE NO. 1 of 10

PREPARATION, REVISION & CONTROL OF FIELD PROCEDURES

1.0 SCOPE

1.1 This procedure establishes the requirements for preparation, revising and controlling field procedures to include Engineering Specifications (E.S.D.'s) and Q.A. Instructions.

2.0 PURPOSE

2.1 To provide direction for implementation of the requirements established by the Diablo Canyon Site Q.A. Manual, Section KFP-17.

2.2 To establish an outline which will assure uniformity, and consistancy of Field initiated procedures.

2.3 To establish a method for distribution and control of field procedures.

3.0 DEFINITIONS

3.1 Engineering Specifications Diablo:

Procedures developed to implement requirements established by the Contract, Code, and Specifications applicable to the Diablo Canyon Nuclear Power Plant. Included are procedures for Engineering, Production, Quality Assurance, Quality Control and Administration. Henceforth referred to as E.S.D.'s.

3.2 Q.A. Instructions:

Special instructions issued to supplement, clarify or implement job requirements. Q.A. Instructions may be incorporated into E.S.D.'s or may stand alone as a job requirement.

3.3 Field Procedures:

E.S.D.'s and Q.A. Instructions initiated and used for field work only.

4.0 RESPONSIBILITY

4.1 Field QA/QC Manager is responsible for assuring compliance with this procedure.

FOR INFORMATION ONLY

4.2 Chief Field Engineer is responsible for reviewing engineering and construction procedures for compliance with code, contract and specification requirements.

4.3 Field Quality Engineering Supervisor is responsible for administering new and revised procedures, and for distribution and control of all field procedures.

5.0 PROCEDURE

5.1 E.S.D. Preparation

5.1.1 E.S.D.'s shall be prepared using the new typical outline shown below. All section headings are not mandatory for all procedures. Other headings may be used as required for each application.

TYPICAL ESD FORMAT

1.0 SCOPE

1.1

1.1.1 — Explain the area of applicability of the procedure.

2.0 PURPOSE

2.1

2.2 — The reason for writing the procedure. Include source reference documents.

3.0 DEFINITIONS

3.1

3.2 — Define important terms or words.

3.3

4.0 RESPONSIBILITY

4.1

4.2 — Describe key responsibilities as applies to specific personnel.

5.0 PROCEDURES

5.1

5.1.1 Describe all steps required to implement the procedure. Made reference to required forms attached.

5.1.2

5.2

6.0 RECORDS

6.1 Indicate requirements for preparation of records, maintenance and storage. (Include copies of forms.)

5.1.2 Proposed new E.S.D.'s may be initiated by Engineering, Production, Purchasing, Quality Assurance or Quality Control. Each new E.S.D. shall be written in draft form.

5.1.3 Production, purchasing and engineering draft procedures shall be approved by the Chief Field Engineer prior to assigning a number to the procedure and reducing it to the final typed form. (Attachment #2)

5.1.4 Q.A. and Q.C. procedures shall be reviewed by the Chief Engineer for comment, and approved by the Q.A. Supervisor or Q.C. Supervisor respectively, before assigning a number and reducing to the final typed form.

5.1.5 Approved drafts shall be forwarded to the Quality Engineering Supervisor or his designated representative. The procedure will be assigned an E.S.D. number, and forwarded to the Field Q.A. Manager for comment and/or approval.

5.1.6 N.D.E. procedures shall be reviewed and approved by a N.D.E. Level III, and submitted to the A.N.I. for review.

5.1.7 Upon approval by the Field Q.A./Q.C. Manager and/or N.D.E. Level III, the procedure will be routed to PG&E General Construction for approval.

5.2 E.S.D. Revision

5.2.1 Proposed E.S.D. revisions may be initiated by Engineering, Production, Purchasing, Quality Assurance or Quality Control. Each proposed revision shall be submitted in draft form.

2-9-82 5.2.2 Approvals and routing of proposed revisions, shall be in accordance with paragraph 5.1.3 thru 5.1.7 of this procedure.

1-28-81 5.2.3 Enter approved revision dates on E.S.D. Revision Index. (Attachment #4) Distribution shall be in accordance with paragraph 5.5.6.

2-9-82 5.2.4 As it becomes necessary to implement immediate changes in the E.S.D.'s due to revisions in PG&E design criteria, N.R.C. bulletins, etc., written enumeration of the required additions, deletions and/or revisions received from PG&E requesting immediate implementation shall constitute a valid change to the affected E.S.D. The change must be approved by the responsible PG&E Resident Engineer.

2-9-82 5.2.4.1 Distribution of the document requesting the change shall be made in accordance with paragraph 5.5.6.

2-9-82 5.2.4.2 The change shall be drafted and submitted for approval within 20 working days in accordance with paragraphs 5.2.1 and 5.2.2. The approved change will supercede the document requesting the change.

5.3 Q.A. Instruction Preparation

5.3.1 Recommendations for initiation of a Q.A. Instruction may be made by Production Supervision, Engineering, Purchasing, Q.A. or Q.C. Personnel to the Q.A. Supervisor, Q.C. Supervisor or Q.A./Q.C. Manager.

5.3.2 New Q.A. Instructions shall be prepared in draft form by the Q.A. Supervisor, Q.C. Supervisor or Q.A./Q.C. Manager.

5.3.3 Instructions implementing, revising or in any way affecting an approved E.S.D. shall reference the E.S.D. number and the paragraph or paragraphs affected. Other instructions shall reference the source document or basis for initiation of the instruction.

5.3.4 The supervisor of the area affected by the Q.A. Instruction shall be consulted prior to final type of the instruction. i.e.: Instructions affecting hanger installation shall be reviewed with the support of Engineering Supervisor and Production Supervisor, if applicable.

5.3.5 After comments are solicited and incorporated, the final Q.A. Instruction shall be approved by the Field Q.A./Q.C. Manager. If the instruction implements changes to E.S.D.'s approved by PG&E, the instruction shall be submitted to PG&E for approval. The Field Q.A./Q.C. Manager shall determine the need for requiring PG&E approval of other Q.A. Instructions.

5.4 Q.A. Instruction Revisions

5.4.1 Revisions to Q.A. Instructions shall be initiated, incorporated and approved following the same steps as the original instructions; paragraphs 5.3.1 thru 5.3.5.

2-9-82 5.4.2 As is becomes necessary to implement immediate changes in the Q.A. Instructions due to PG&E design criteria, N.R.C. bulletins, etc., written enumeration of the required additions, deletions and/or revisions received from PG&E requesting immediate implementation shall constitute a valid change to the affected Q.A. Instruction.

2-9-82 5.4.2.1 Distribution of the document requesting the change shall be made in accordance with paragraph 5.5.6.

2-9-82 5.4.2.2 The change shall be drafted and submitted for approval in accordance with paragraph 5.4.1: The approved change will supercede the document requesting the change.

5.5 Distribution and Control of E.S.D.'s and Q.A. Instructions

5.5.1 The Field Q.A. Supervisor or his designee is responsible for distribution and control of E.S.D.'s and Q.A. Instructions.

5.5.2 All new or revised E.S.D.'s and Q.A. Instructions shall have a "Specification/Instruction Change Notice" for attached. (See Attachment #3)

1-28-81 5.5.3 Upon approval, the Field Q.A./Q.C. Manager shall sign the Change Notice and attach it to the Field Procudure which shall be returned to the Field Q.A. Supervisor.

5.5.4 The Field Q.A. Supervisor will then forward the Field Procedure to PG&E for approval, if required.

5.5.5 Upon approval by PG&E and return to the Field Q.A. Supervisor, if required, copies shall be reproduced from the original for distribution. The original shall be retained in a locked file when not in use.

9-12-80 5.5.6 A log shall be maintained of all Field Procedure holders. Distribution shall be in accordance with the log. (Attachment #1)

9-12-80 5.5.7 Upon receipt of new or revised Field Procedures, the recipient shall place the procedure in his book, sign and date the Change Notice Form, attach the void pages and return the form to the Field Q.A./Q.C. Supervisor or his designee. When the Change Notices are received they shall be logged in. If the procedure holder fails to return his Change Notice and void pages, the Field Q.A. Supervisor shall conduct a follow-up and take necessary action to assure compliance with this procedure.

2-9-82 5.5.8 Random site audits will be conducted of field procedures (E.S.D.'s, Q.A. Instructions, etc.) distributed to on-site Pullman Power Products personnel to assure that procedures are being maintained.

Pullman Power Products

PREPARED BY: J. Brasher	APPROVED BY: H. Karner	ESD 269 DOCUMENT NO.
		ISSUE DATE: 8-14-78
REV. 2-9-82 R. Llewellyn 9-12-80	TO BE USED ONLY ON JOB # 7177	PAGE NO. 7 of 10

FIELD PROCEDURE CONTROL LOG

DIST.

ISSUED

PROCEDURE NUMBER

BOOK ASSIGNED TO:

BOOK NUMBER

CHANGE #

PROCEDURES ISSUED ⧄

OLD REV. RETURNED ☒

Attachment #1

FOR INFORMATION ONLY

Pullman Power Products		ESD-269 DOCUMENT NO.
PREPARED BY: R. L. Fisher	APPROVED BY:	DATE: 8-14-78
REV. 2-9-82 R. Llewellyn	TO BE USED ONLY ON JOB # 7177	PAGE NO. 8 of 10

01-81-08

Pullman Power Products		DOCUMENT NO.
PREPARED BY:	APPROVED BY:	DATE:
	TO BE USED ONLY ON JOB #	PAGE NO.

01-81-08

Attachment #2

Attachment #2

81-81-08

Pullman Power Products

SPECIFICATION/INSTRUCTION CHANGE NOTICE

* No. _____

Date _____

E.S.D. Number _____
Page _____ Paragraph(s) _____
Q.A. Instruction Number _____

Title: _____

TO: _____

The above specification has been changed as follows:

APPROVED: _____ QA/QC Manager

_____ P.G.& E. Engineer

Reason or Justification for Change: (Fill in when not obvious from above)

CHANGE ENTERED: _____ DATE: _____

* Change Number to be assigned consecutively under each specification.

Attachment #3

Attachment #3

FOR INFORMATION ONLY

ESD INDEX

ESD	DESCRIPTION	REVISION LEVEL
D-200	MATERIAL WITHDRAWAL - PIPE SHOP	6-4-74
D-201	CLASS I MATERIAL WITHDRAWAL	6-12-80
D-202	WELD MATERIAL DISTRIBUTION AND CONTROL	7-8-80
D-203	WELDING, STAMPING, REINFORCEMENT & UNDERCUTTING B31.7	9-10-73
D-204	WELDING, STAMPING, REINFORCEMENT & UNDERCUTTING B31.1	11-7-73
D-205	PG&E CODE CLASSES	10-31-78
D-206	RADIOGRAPHIC PROCEDURES B31.7	5-15-74
D-207	RADIOGRAPHIC PROCEDURES ASME S-1	4-8-74
D-208	MAGNETIC PARTICLE PROCEDURE/DRY POWDER B31.7	2-17-75
D-209	MAGNETIC PARTICLE PROCEDURE/DRY POWDER B31.1	2-17-75
D-210	LIQUID PENETRANT PROCEDURE B31.7	10-24-78
D-211	LIQUID PENETRANT PROCEDURE B31.1	10-24-78
D-212	QUALITY ASSURANCE DOCUMENT CONTROL	9-26-80
D-213	GAGE AND INSTRUMENT CONTROL/CALIBRATION	3-18-80
D-214	BACKING GAS DAMS FOR TIG WELDS	5-28-74
D-215	VISUAL INSPECTION	6-15-76
D-216	WELDER PERFORMANCE QUALIFICATION	7-22-80
D-217	RECEIVING CLASS I PROCEDURE	7-14-80
D-218	POST WELD HEAT & PREHEAT TREATMENT PROCEDURE	12-30-77
D-219	WELD PROCEDURE MONITORING	1-17-80
D-220	CLEANING FOR FIT-UP & WELDING-CS/SS	8-21-79
D-221	WELDING REPAIR PROCEDURE	1-5-79
D-222	CONTROL VALVES	6-4-75
D-223	INSTALLATION & INSPECTION OF CLASS I PIPE SUPPORTS	
D-224	VALVE INSTALLATION	3-24-75

- 6218 (REV 6/79)

PG and E

FOR INTRA—COMPANY USES

Allegation # 20

From Division or Department: NUCLEAR PLANT OPERATIONS
Diablo Canyon Power Plant

FILE No. 731.02

RE LETTER OF

SUBJECT: Chemistry and Radiation Protection Technician
Job Analysis

To Division or Department

February 22, 1983

TO J. E. RADFORD/NPO TRAINING SUPERVISOR

Attached is an outline form of the jobs accomplished by the Chemistry and Radiation Technicians. The lengthy list of chemistry sample points and procedures was not intended to overwhelm anyone, it is simply a good way to point out all the various aspects of our chemistry. The listing of the radiological aspects are more general in nature but not necessarily requiring any less manpower or emphasis.

DALE CLIFTON

DRClifton(69-3452):kcl

Attachment

xc KBieze
JVBoots
DOhmen
MPeterson

DC0147 1I

11 27

A. Chemistry

1. Equipment the Technician must be able to operate

a.	Ultra-violet Visible Spectrophotometer	B-1
b.	Atomic Absorption Spectraphotometer	B-2
c.	Graphite Furnance AA-Spectraphotometer	
d.	Ion Chromatograph	
e.	Gas Partitioner and Recorder	B-3
f.	Conductivity Bridge	B-4
g.	Analytical Balance	B-5
h.	Top Loading Balance	B-6
i.	Double Pan Balance	B-7
j.	PH Meter	B-8
k.	Thermolyne Electric Furnace	B-9
l.	Ovens	B-10
m.	Centrifuge	B-11
n.	Portable Oxygen Indicator	B-12
o.	Automatic Titration (Boron)	B-19
p.	Oil and Water Baths and Steamtable	
q.	Amperometric Titrator (Chlorine)	
r.	Various Probes (Cl^-, F^-, Ca, etc.)	
s.	Microscope and Camera Mount	

2. Sampling, Technicians must know the location and sampling requirements for the following:

a.	Primary Cycle Sampling	A-1
	1) Chemical and Volume Control System	
	2) Safety Injection System	
	3) Boric Acid Recycle System	

4) Primary Water Storage Tanks

5) Refueling Water Storage Tanks

6) Component Cooling Water System

7) Liquid Hold-Up Tanks

8) Monitor Tanks

9) RHR Pump Discharge

b. Secondary Cycle Sampling A-2

1) Steam Generator Blowdown

2) Steam Generator Blowdown Cleanup Demin. System

3) Main Steam

4) Condensate

5) Feedwater

6) Service Cooling Water

7) Condensate Storage Tank

8) Stator Cooling Water

9) Transfer Tank

10) Auxiliary Boiler Blowdown

11) Reservoirs

12) Diesel Engine Jacket Cooling Water

13) Diesel Fuel Oil

14) Turbine E-H Fluid

15) Turbine Lube Oil

16) Diesel Lube Oil

17) Auxiliary Steam Drain Receiver

18) Makeup Demineralizer Regenerant

19) Domestic and Drinking Water

20) Fire Water

21) Main Circ. (Intake) Cooling Water

22) Waste Pond, Creek

c. NPDES Sampling E-7

1) Influent

2) Once-through Cooling Water

3) Auxiliary Saltwater Cooling

4) Make-up Water System Waste Effluent

5) Liquid Radioactive Waste Treatment System Effluent

6) Turbine Building Sump/Oily Water Separator Effluent

7) Reverse Osmosis Blowdown

8) Condensate Demin. and Seawater Evaporator Demin. Regenerant

9) Seawater Evaporator Blowdown

10) Condensate Pumps Discharge Header Overboard

11) Condenser Tube Sheet Leak Detection Dump Tank Overboard

12) Intake Building Floor Drains

13) Intake Screen Wash

14) Thermal Effects Laboratory Discharge

15) Yard Storm Drains

d. Additional Sampling

1) Domestic and Drinking Water

2) Clarifier

3) Floor Drain Receiver

4) Equipment Drain Receiver

5) Laundry Hot Shower Tank

6) Chemical Drain Tank

7) Waste Concentrator Condensate Tank

8) Gas Decay Tank

9) Condensate Air Ejector

10) Hydrazine Day Tank

11) Ammonia Day Tank

12) Gas Stripper Feed Pumps

13) Pressurizer Liquid and Steam Spaces

14) Spray Additive Tank

15) Spent Fuel Pool Demin. In and Out

16) Deareator

3. Chemistry Procedures which the Technicians must be able to perform using the appropriate techniques.

a. Volume 8 Procedures	General Use
C-1 pH	plant purified and raw water, chromated water and sea water systems
C-2 Conductivity	plant purified and raw water, chromated water and sea water systems
C-3 Hardness, EDTA	plant raw water systems, makeup system
C-4 Alkalinity	plant raw water systems, makeup system
C-5 Silica	plant purified and raw water systems
C-8 % Sodium Hydroxide	containment spray additive tank
C-9 % Sodium Carbonate	containment spray additive tank
C-10 Diss O_2 >.1ppm	purified water systems, layup systems, seawater systems
C-11 Diss O_2 <.1ppm	purified water, makeup water, layup water systems

	General Use
C-12 Chloride >2ppm	chromated water systems
C-13 Chloride, $HgNO_3$	chromated systems, purified water systems
C-14 Chloride, 0.01-2ppm	purified water systems, raw water systems
C-15 Fluoride	purified, raw water, chromated systems
C-16 Boron, Titrimetric	borated systems, boric acid systems
C-17 Boron, Colorimetric	borated system, radwaste discharges, seawater systems
C-18 Ammonia - Colorimetric	layups and purified water (secondary) systems
C-21 Hydrazine, >200 ppm	chem addition stations, layup systems
C-22 Hydrazine, 1-200 ppm	layup systems, reactor coolant (startup)
C-23 Hydrazine, <1ppm	secondary system, aux. boiler
C-24 Hydrogen	reactor coolant, waste gas systems
C-25 Suspended, Dissolved, Total Solids	raw water, purified water, seawater systems
C-27 Chromate >20ppm	chromated systems
C-28 Settleable Matter	seawater systems
C-29 Lithium	reactor coolant, purified systems, LRW
C-30 Sodium, Potassium	reactor coolant, purified systems
C-31 Aluminum	reactor coolant, purified systems, boric acid system
C-32 Chromium	seawater systems
C-33 Cobalt	seawater, purified water system (not currently used)

C-34 Copper	layup and secondary systems, seawater systems
C-35 Iron	layup and secondary systems, LRW
C-36 Nickel	layup and secondary systems, seawater systems
C-37 Zinc	layup and secondary systems, seawater systems
C-38 Calcium, Magnesium	reactor coolant, purified and raw water systems, boric acid systems
C-39 Manganese	not currently used
C-40 Metal Analysis (extraction)	seawater systems, layup systems, LRW
C-42 Mercury, Flameless AA	seawater systems, LRW
C-43 Lead	seawater systems, LRW
C-44 Cadmium	seawater systems. LRW
C-45 Silver	seawater systems, LRW
C-48 Turbidity	purified water systems, reactor coolant, seawater systems
C-49 Nitrogen (Ammonia)	seawater systems
C-50 Grease and Oil	seawater systems, LRW
C-51 Chlorine	raw water, sea water systems
C-52 Phenolic Compounds	seawater systems, LRW (currently contracted)
C-53 Kinematic Viscosity	diesel fuel oil
C-54 Water and Sediment	diesel fuel oil
C-55 Boron Autotitration	reactor coolant, boric acid systems
C-56 Chloride, Specific Ion	purified water systems
C-57 Hydrogen/GC	reactor coolant
Chloride Smears	piping and equipment
Oxygen % in Nitrogen blanket for wet layup	

B. Radiation Protection

1. Equipment Technicians must be familiar with and able to operate

a. Portable Equipment G-7

1) Doserate

a) Rad Owl

b) Radgun

c) HPI 1010

d) PNR-4 Neutron

e) PRS-2 Neutron

f) Teletector G112

g) RO-2

2) Countrate

a) E-140

b) RM-15

c) PRM-6

b. Stationary Equipment

1) Whole Body Counter D-8

2) Respirator Test Booth D-6

3) Constant Air Monitors

4) Portable Monitors

2. General Surveys the Technician must be proficient in

a. Dose Rate G-7, S-1

b. Contamination G-4, S-2

c. Airborne G-3

d. Free Release G-6

3. Sample Collection - be able to properly collect

a. Particulate

b. Iodine

c. Noble Gas

d. Tritium

4. Issue Dosimetry, TLD D-9

a. Actions to take when TLD is lost or damaged

5. Technicians must be well versed and continually updating

a. Exposure Control

1) ALARA Concept RCS-1

2) External Dose Control G-2, D-1

3) Internal Dose Control G-3

4) PER - Computer Tracking using HP 1000

6. Technicians must be able to set up and maintain proper controls to establish a "Controlled Area" G-4 - G-5

a. Be familiar with and capable of completing an SWP/RWP G-1

1) Establish Radiological Working Conditions

a) Clothing

b) Airborne

c) Stay Time

d) Monitoring Devices

e) Special Conditions

7. Technicians must know the various types, functions, use and repair of respirators

a. Self-Contained

b. In-Line

c. Air Purifying

d. Duo-Flow

e. Powered Air

C. Counting Room/Radiochemistry

1. Equipment with which the Technician must be familiar

   a. Multichannel Analyzer, ND-66 B-13

   b. HP 9845 Computer

   c. HP Disc System and Support Rack with Amplifiers

   d. Liquid Scintillation Spectrometer B-14

   e. DS-2 Proportional Counter B-17

   f. MS-2 Single Channel Analyzer

   g. Tennelec α β Proportional Counter

   h. Plotter 9872A

   i. Printer 2631G

2. Analysis which the Technician must be capable of completing

   a. Gaseous Radwaste Discharge A-6

   b. Liquid Radwaste Discharge A-5

   c. Gross Alpha, Beta, Gamma

   d. Gamma Spectral

   e. Principle Gamma

   f. $SR^{89, 90}$

   g. P^{32}

   h. Tritium

   i. Particulate

   j. Iodine

   k. Noble Gas

   l. Smears

D. Radioactive Waste Material

1. Technician must be familiar with and able to:

   a. Classify Radioactive Material

b. Properly Package Radioactive Material

c. Properly Label Radioactive Material

d. Prepare Shipping Papers

e. Understand and Oversee Radiation Limits

f. Verify Solidification Process C-58

g. Understand and Oversee Resin Solidification

h. Inspect and Repair Respirators

i. Understand and Operate:

1) Radwaste Compactors, Box and Drum

2) Protective Clothing Laundry Facility

3) Respirator Cleaning and Decon Facility

j. Area and Equipment Decontamination

E. Emergency Actions Required of the Technician

1. ON and OFF Site Monitoring

2. Constant Monitoring in Plant

3. Contamination Control

4. Exposure Control

5. Post Accident Sampling

a. Sentry Sampling System Operation

6. Injury with Radiological Implications

a. Rescue

b. First Aid

c. Decontamination

d. Transport

e. Hospital Support

1) Contamination Control

2) Radiological Monitoring

3) Decontamination