Op-Test No.:__1__ Scenario No.: ____1_____ Event No.: ____1____ Page __1__ of __7__

Event Description: _____Swap Condensate Booster Pumps Sets_____

Time	Position	Applicant's Actions or Behavior
	BOP	Refers to OP C7A:I. Selects and start a standby booster pump set Secures other booster pump set and place in standby
	RO	Performs peer check of pump start and securing
	SFM	Performs tailboard of booster pump start Directs BOP to start the booster pump

Op-Test No.:__1__ Scenario No.: ____1_____ Event No.: ____2____ Page __2__ of __7__

Event Description : Power Reduction for Heater 2 Drip Pump Oil Leak

Time	Position	Applicant's Actions or Behavior
	BOP	Coordinate with RO to perform the power decrease as directed by SFM Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	RO	Coordinate with BOP to perform the power decrease as directed by SFM Prepare the makeup system for boration and borate as required Prepare DEHC and start load reduction as directed by SFM Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	SFM	Performs tailboard on power reduction and reactivity control Directs and monitors power reduction and boration

Op-Test No.:__1__ Scenario No.: _____ Event No.: ____3____ Page __3__ of __7__

Event Description : Turbine Control Fail to Manual

Time	Position	Applicant's Actions or Behavior
	BOP	Assists in stabilizing plant on discovery of turbine control failure Assits in ramping turbine load to 80% manually Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	RO	Notices Tave/Tref mismatch and informs SFM Identifies Turbine Controls in Manual Stops boration initially Continues boration when directed to Assists in ramping turbine load to 80% manually Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	SFM	Directs boration to stop and to stabilize the plant Determines need to continue power reduction to 80% Calls for maintenance support Directs control room response

Op-Test No.:___1____ Scenario No.: _____1_____ Event No.: ____4____ Page __4__ of __7__

Event Description: VCT Level Channel 112 Failure High

Time	Position	Applicant's Actions or Behavior
	BOP	Report alarm PK04-24, VCT Press, Lvl, Temp alarm Identifies VCT level high Redirects letdown to VCT after failed instrument identified as cause
	RO	Assists in identifying VCT alarm as failed instrument Stops ramp if directed Continues ramp if directed
	SFM	Acknowledges report on PK04-24 Directs crew to stabilize the plant Follows guidance of AR PK04-24 and OP AP-19 Directs and monitors control room response

Op-Test No.:___1__ Scenario No.: ____1_____ Event No.: ____5 ___ Page __5__ of __7__

Event Description: _____MFW Pump Master Controller Failure (requiring manual control)_____

Time	Position	Applicant's Actions or Behavior
	BOP	Acknowledges SG level alarms on PK09 and report to SFM Closely monitor primary and secondary parameters for proper response Control Turbine as directed
	RO	Acknowledges SG level alarms Identifies MFW pump controller failing low Takes manual control or MFW pump master controller Recognize Master Controller failure and take Manual of MFW pump 1-1 and 1-2 controllers Restore MFW pump dp and SG level in manual control Closely monitor primary and secondary parameters for proper response Recommend Reactor trip if unable to control / maintain stable plant conditions
	SFM	Acknowledges BOPCO on SG alarms Directs RO to take manual control of MFW pump master controller and stabilize the plant Directs BOP to control turbine load Request Asset Team assistance Order Reactor Trip if SG level cannot be maintained

Op-Test No.:__1__ Scenario No.: ____1_____ Event No.: ____6 ___ Page __6__ of __7__

Event Description: ATWS

Time	Position	Applicant's Actions or Behavior
	BOP	Recognize and report Reactor Trip required Perform Immediate Actions of EOP E-0 Recognize failure of reactor to trip, ATWS and report status to SFM Open 13D and 13E ** Critical Task**
	RO	Recognize and report Reactor Trip required Perform Immediate Actions of EOP E-0 Recognize and report failure of reactor to trip, ATWS Perform manual reactor trip ** Critical Task** Inform SFM when reactor trips
	SFM	Recognize Reactor Trip required but did not occur Directs RO to manually trip the reactor ** Critical Task** Directs BOPCO to open 13D and 13E ** Critical Task** Enters EOP E-0 and directs control room response

Op-Test No.:__1__ Scenario No.: ____1_____ Event No.: ____7 ___ Page __7__ of __7__

Event Description: SBLOCA with Loss of All Feedwater

Time	Position	Applicant's Actions or Behavior
	BOP	Recognize and report LOCA Recognize and report NO AFW pumps and NO AFW flow Perform steps of E-0 and FR-H.1 as directed Establish forward flow from secondary system and depressurize 2 SGs ** Critical**
	RO	Recognize and report LOCA Perform steps of E-0 and FR-H.1 as directed Establish Bleed and Feed if conditions met ** Critical**
	SFM	Acknowledge LOCA report Directs EOP E-0 response for LOCA Transitions to FR-H.1 on exit from E-0 ** Critical** Directs control room response per FR-H.1 Directs RO in Bleed and Feed requirement per Foldout Page ** Critical** Directs continued attempts by BOPCO to establish feed during Bleed and Feed ** Critical**
	NOTE:	Terminate scenario when forward feed established to SGs.

Op-Test No.:__2__ Scenario No.: ____1_____ Event No.: ____1____ Page __1__ of __6__

Event Description: _____Increase Accumulator 1-1 Pressure_____

Time	Position	Applicant's Actions or Behavior
	BOP	Refers to OP B-3B:I Pressurizes Accumulator 1-1 to within ITS limits
	RO	Performs peer check of valve manipulations
	SFM	Performs tailboard of accumulator pressurization Directs BOP to pressurize Accumulator 1-1

Op-Test No.:__2__ Scenario No.: ____1_____ Event No.: ____2____ Page __2__ of __6__

Event Description : Power Reduction to 850 MW from EPOS Request

Time	Position	Applicant's Actions or Behavior
	BOP	Coordinate with RO to perform the power decrease as directed by SFM Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	RO	Coordinate with BOP to perform the power decrease as directed by SFM Prepare the makeup system for boration and borate as required Prepare DEHC and start load reduction as directed by SFM Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	SFM	Performs tailboard on power reduction and reactivity control Directs and monitors power reduction and boration

Op-Test No.:__2__ Scenario No.: ____1_____ Event No.: ____3____ Page __3__ of __6__

Event Description : Failure of 43/MU to Auto Borate

Time	Position	Applicant's Actions or Behavior
	BOP	Acknowledges RMUW Flow mismatch alarm Stabilizes plant on discovery of 43/MU failure Operates FCV-110 A/B and FCV-111 A/B as directed to manually borate ** Critical** Assists in ramping turbine as needed Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	RO	Acknowledges RMUW Flow mismatch alarm Stops ramp Sets up and borates in Manual per OP B-1A:VII ** Critical** Commences ramping turbine load to 850 MW Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	SFM	Acknowledges RMUW alarm and enters PK05-11 Directs ramp to stop Enters AP-19 to troubleshoot problem with 43/MU Calls Asset Team for support Directs RO to manually borate per OP B-1A:VII and provides oversight ** Critical** Directs ramp to recommence Directs control room response

Op-Test No.:___2____ Scenario No.: _____1_____ Event No.: ____4____ Page __4__ of __6__

Event Description: Turbine Impulse Channel PT-505 Failure Low

Time	Position	Applicant's Actions or Behavior
	BOP	Report alarms PK08-11 (C-8) and PK12-14 (AMSAC) Identifies PT-505 failure Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	RO	Reports rod motion Determines rod motion not required and takes rods to manual ** Critical** Stops ramp if directed Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	SFM	Acknowledges report on alarms Directs RO to take rods to manual ** Critical** Directs crew to stabilize the plant Follows guidance of OP AP-5 and ITS 3.3.1 Requests Asset Team assistance Directs and monitors control room response

Op-Test No.:___2__ Scenario No.: ____1_____ Event No.: ____5 ___ Page __5__ of __6__

Event Description: _____PZR Spray Controller Failure (requiring manual control)_____

Time	Position	Applicant's Actions or Behavior
	BOP	Acknowledges PZR Pressure alarms on PK05-17 and report to SFM Closely monitor primary and secondary parameters for proper response
	RO	Acknowledges PZR Pressure alarms on PK05-17 and report to SFM Identifies PZR spray controller failing and takes Manual control of spray valves ** Critical** Closely monitor primary and secondary parameters for proper response
	SFM	Acknowledges BOPCO and RO on PZR pressure alarms Directs RO to take manual control of PZR spray controller and stabilize the plant ** Critical** Follows guidance of PK05-17 and AP-13. Verifies ITS limits not exceeded Requests Asset Team assistance

Op-Test No.:__2__ Scenario No.: ____1_____ Event No.: ____6 & 7 ___ Page __6__ of __6__

Event Description: PZR Steam Space LOCA with failure of SI

Time	Position	Applicant's Actions or Behavior
	BOP	Acknowledges PZR Pressure alarms on PK05-17 and report to SFM Closely monitor primary and secondary parameters for leak detection Perform Immediate Actions of EOP E-0 Recognize and report failure of Safety Injection Signal Perform manual SI at VB-1 Align SI per Attachment E of E-0 Perform actions of E-0 and E-1 as directed
	RO	Acknowledges PZR Pressure alarms on PK05-17 and report to SFM Determine increasing leak rate Diagnose leak from steam space Trip Reactor prior to Low Pressure setpoint ** Critical Task** Perform Immediate Actions of EOP E-0 Perform manual SI from CC1 ** Critical Task** Perform actions of E-0 and E-1 as directed
	SFM	Acknowledge PZR pressure alarm reports from RO/BOPCO Follow guidance of PK05-17 and AP-1 for leak Directs RO to manually trip the reactor ** Critical Task** Directs RO and BOPCO to manually initiate SI ** Critical Task** Enters EOP E-0 and directs control room response Transitions to E-1 and directs control room response Transitions to E-1.2

Op-Test No.:__1__ Scenario No.: ____2_____ Event No.: ____1____ Page __1__ of __7__

Event Description: Swap CCW Heat Exchangers

Time	Position	Applicant's Actions or Behavior
	BOP	Refers to OP F-2:II and OP E-5:IV Starts ASW Train 1-2, secures ASW Train 1-1 Verifies proper system response of CCW Hx
	RO	Performs peer check of pump start and securing
	SFM	Performs tailboard of pump train swap Directs BOP to start the ASW pump train 1-2 and secure 1-1

Op-Test No.:__1__ Scenario No.: ____2_____ Event No.: ____2____ Page __2__ of __7__

Event Description : Power Reduction for Fire at Midway

Time	Position	Applicant's Actions or Behavior
	BOP	Coordinate with RO to perform the power decrease as directed by SFM Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	RO	Coordinate with BOP to perform the power decrease as directed by SFM Prepare the makeup system for boration and borate as required Prepare DEHC and start load reduction as directed by SFM Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	SFM	Performs tailboard on power reduction and reactivity control Directs and monitors power reduction and boration

Op-Test No.:__1__ Scenario No.: ____2_____ Event No.: ____3____ Page __3__ of __7__

Event Description : RCS Tc (TE-441) Failed High

Time	Position	Applicant's Actions or Behavior
	BOP	Diagnose and report Loop 4 T-cold channel failure Assist in turbine controls as directed
	RO	Recognize and report rod motion concurrent with T-cold channel failure Determine and report rod motion not required Place rod control in manual ** Critical Task Stop ramp as directed Deselect Loop 4 for T-avg and Delta-T control Return T-avg to T-ref (3 step pull and wait) and then place rod control back in auto Recommence ramp as directed
	SFM	Direct plant stabilization until cause diagnosed and analyzed for impact Go to OP AP-5 and direct operator recovery actions Direct RO on rod control and failed channel input action ** Critical action Consult Tech Spec 3.3.1 for 6 hour action to trip bistables for OPΔT and OTΔT trips Direct turbine ramp to recommence

Op-Test No.:___1____ Scenario No.: _____2_____ Event No.: ____4____ Page __4__ of __7__

Event Description: Loss of non-vital 120 VAC (PY-15)

Time	Position	Applicant's Actions or Behavior
	BOP	Assists in diagnosing multiple alarms for PY-15 failure Takes manual control and stabilizes plant as needed Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	RO	Assists in diagnosing multiple alarms for PY-15 failure Takes manual control and stabilizes plant as needed Ensures rods stepping in to match Tave to Tref Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	SFM	Diagnose PY-15 failure Directs crew to stabilize the plant and stop ramp Directs RO to maintain Tave to Tref with rods Follows guidance of OP AP – 4 Directs and monitors control room response Request Asset Team to energize PY-15 on backup supply

Op-Test No.:___1__ Scenario No.: ____2_____ Event No.: ____5 ___ Page __5__ of __7__

Event Description: _____Turbine Governor Valve Failure (FCV-142)_____

Time	Position	Applicant's Actions or Behavior
	BOP	Acknowledges various alarms and diagnoses load rejection Closely monitor primary and secondary parameters for proper response
	RO	Acknowledges various alarms and diagnoses load rejection Closely monitor primary and secondary parameters for proper response
	SFM	Acknowledges RO and BOPCO on alarms and diagnosis of load rejection Enters OP AP-25 and directs control room response Request Asset Team assistance

Op-Test No.:__1__ Scenario No.: ____2_____ Event No.: ____6, 7 & 8 ___ Page __6__ of __7__

Event Description: Seismic induced SG 1-1 Feed Line Break with Failure of Train A SI signal

Time	Position	Applicant's Actions or Behavior
	BOP	Recognize and report Reactor Trip and Safety Injection Diagnose Feedline Break Perform Immediate Actions of EOP E-0 Recognize and report failure of Train A SI signal Attempt to Initiate SI Train A Align Train A SI components per Attachment E ** Critical Task** Isolate SG 1-1 when directed ** Critical Task** Throttle AFW to minimize cooldown as directed ** Critical Task** Perform steps of E-0 and E-2 as directed
	RO	Recognize and report Reactor Trip and Safety Injection Diagnose Feedline Break Perform Immediate Actions of EOP E-0 Recognize and report failure of Train A SI signal Attempt to Initiate SI Train A Perform steps of E-0 and E-2 as directed
	SFM	Acknowledge Reactor Trip and SI Diagnose Feedline Break Direct control room response per E-0 Direct BOPCO and RO to manually initiate SI to align Train A Direct BOPCO to perform Attachment E to manually align Train A SI ** Critical Task** Transition to E-2 when appropriate Direct BOPCO to isolate SG 1-1 ** Critical Task**

Op-Test No.:__1__ Scenario No.: ____2_____ Event No.: ____9 ___ Page __7__ of __7__

Event Description: LBLOCA at 25% DBA

Time	Position	Applicant's Actions or Behavior
	BOP	Recognize and report LOCA Trip RCPs as directed ** Critical Task** Perform steps of E-1 as directed
	RO	Recognize and report LOCA Perform steps of E-1 as directed
	SFM	Acknowledge LOCA report Transitions from E-2 to E-1 Direct BOPCO to Trip RCPs ** Critical Task** Directs control room response per E-1
	NOTE:	Terminate scenario when transition to E-1.3, Cold Leg Recirc, takes place

Op-Test No.:__2__ Scenario No.: ____2_____ Event No.: ____1____ Page __1__ of __8__

Event Description: _____Increase Power to 50%_____

Time	Position	Applicant's Actions or Behavior
	BOP	Coordinate with RO to perform the power increase as directed by SFM Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	RO	Coordinate with BOP to perform the power increase as directed by SFM Prepare the makeup system for dilution and dilutes as required Prepare DEHC and start load increase as directed by SFM Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	SFM	Performs tailboard on power increase and reactivity control Directs and monitors power increase and dilution

Op-Test No.:__2__ Scenario No.: ____2_____ Event No.: ____2____ Page __2__ of __8__

Event Description : PZR Level Channel 459 Fail Low

Time	Position	Applicant's Actions or Behavior
	BOP	Acknowledge and report PRZ level and Charging Mismatch alarms Diagnose level channel LT-459 failure Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	RO	Detect charging and PZR level increase Take manual control of charging to stabilize PZR level and maintain seal flow ** Critical** Stops ramp as directed Deselect Channel 459 from service as directed Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	SFM	Acknowledges report on PZR and Charging alarms Directs RO to take manual control of charging and stabilize the plant ** Critical** Directs RO to stop the ramp Enters AP-5 and directs control room response Determine ITS 3.3.1 requirements for tripping bistables in 6 hours Contacts Asset Team for assistance

Op-Test No.:__2__ Scenario No.: ____2_____ Event No.: ____3____ Page __3__ of __8__

Event Description : Restore Letdown

Time	Position	Applicant's Actions or Behavior
	BOP	Restore Letdown per OP B-1A:XII ** Critical** Closely monitor primary and secondary parameters for proper response
	RO	Coordinate with BOPCO on Letdown restoration Maintain seal injection and PZR level within limits ** Critical** Commence load ramp as directed Closely monitor primary and secondary parameters for proper response
	SFM	Tailboard Letdown restoration per OP B-1A:XII Direct BOPCO to restore letdown per procedure Direct RO to continue with load ramp

Op-Test No.:___2____ Scenario No.: _____2_____ Event No.: ____4____ Page __4__ of __8__

Event Description: SG 1-1 Pressure Channel 516 Fail High

Time	Position	Applicant's Actions or Behavior
	BOP	Detects steam flow from SG 1-1 and reports Identifies PT-515 failure and takes manual control of PCV-19 ** Critical** Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	RO	Stops ramp if directed Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	SFM	Acknowledges report on Steam Flow Directs BOPCO to manually close PCV-19 ** Critical** Directs crew to stabilize the plant Follows guidance of OP AP-5 Determine ITS 3.3.2 requirements for tripping bistables in 6 hours Requests Asset Team assistance Directs and monitors control room response

Op-Test No.:___2__ Scenario No.: ____2_____ Event No.: ____5 ___ Page __5__ of __8__

Event Description: SGTL on SG 1-1

Time	Position	Applicant's Actions or Behavior
	BOP	Acknowledge SJAE Rad Monitor alarm PK11-06 Identify RM-15 rad levels increasing Closely monitor primary and secondary parameters for proper response
	RO	Observes charging letdown mismatch Take manual control as necessary to maintain charging/letdown balance Calculate charging mismatch to be around 5 gpm ** Critical** Closely monitor primary and secondary parameters for proper response
	SFM	Acknowledges BOPCO and RO on radiation alarms and charging mismatch Directs RO to stabilize the plant and calculate leak rate Enter AP-3 and OP O-4 and follows guidance Determine ITS limit 3.4.13.d and O-4 limit exceeded ** Critical** Determine actions for plant shutdown IAW ITS and O-4

Op-Test No.:__2__ Scenario No.: ____2_____ Event No.: ____6 ___ Page __6__ of __8__

Event Description: Vacuum Leak

Time	Position	Applicant's Actions or Behavior
	BOP	Acknowledges Condensate DO2 and conductivity alarms on PK12-04/05 and report to SFM Determine vacuum leak as cause and start diagnostics as directed Closely monitor primary and secondary parameters during power decrease
	RO	Acknowledges Condensate DO2 and conductivity alarms on PK12-04/05 and report to SFM Commence boration for power decrease as directed Commence power decrease as directed
	SFM	Acknowledge RO/BOPCO on DO2 and conductivity alarms and decreasing vacuum Enter AP-7 Direct RO to commence a power reduction Determine trip requirements per Attachment 4.2 of AP-7

Op-Test No.:__2__ Scenario No.: ____2_____ Event No.: ____ 7, 8, 9 & 11 ___ Page __7__ of __8__

Event Description:_____Seismic with Generator Lockout, MSL 1-1 Break and Failure Phase A_____

Time	Position	Applicant's Actions or Behavior
	BOP	Acknowledges Generator Trip alarms and report to SFM Closely monitor primary and secondary parameters and response following turbine trip Diagnoses MSL 1-1 leak and recommends reactor trip Performs Immediate Actions for EOP E-0 Performs SG 1-1 isolation per E-2 ** Critical** Determines Train B Phase A failed to actuate and perform manual alignment ** Critical** Performs actions of E-0 and E-2 as directed
	RO	Acknowledges Generator Trip alarms and report to SFM Closely monitor primary and secondary parameters and response following turbine trip Diagnoses MSL 1-1 leak and recommends reactor trip Trips the reactor as directed ** Critical** Performs Immediate Actions for EOP E-0 Performs actions of E-0 and E-2 as directed
	SFM	Acknowledge RO/BOPCO report of generator trip Determines Reactor tip NOT required in current condition (below P-9) Direct control room response to generator trip at low power Acknowledge MSL leak and direct RO to trip the reactor ** Critical** Direct control room response per E-0 Direct BOPCO to isolate SG 1-1 per E-2 ** Critical** Direct BOPCO to perform Attachment E to align Phase A completely ** Critical** Transition to E-2 and direct control room response

Op-Test No.:__2__ Scenario No.: ____2_____ Event No.: ____ 10 ___ Page __8__ of __8__

Event Description: SGTR SG 1-1

Time	Position	Applicant's Actions or Behavior
	BOP	Diagnoses SGTR and reports to SFM Verifies SG 1-1 isolation per E-3 as directed ** Critical** Secures RCPs as directed ** Critical** Performs actions of E-3 and ECA-3.1 as directed
	RO	Diagnoses SGTR and reports to SFM Performs actions of E-3 and ECA-3.1 as directed
	SFM	Acknowledge RO/BOPCO report of SGTR Transition to E-3 when appropriate Direct BOPCO to trip RCPs ** Critical** Direct BOPCO to verify SG 1-1 isolation ** Critical** Transitions to ECA-3.1 Direct control room response per E-3 and ECA-3.1

Op-Test No.:__2__ Scenario No.: ____3_____ Event No.: ____1____ Page __1__ of __5__

Event Description: DRPI Data A Failure

Time	Position	Applicant's Actions or Behavior
	BOP	Acknowledge PK03-21 DRPI alarm and report Select S106 to B Only when directed Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	RO	Acknowledge PK03-21 DRPI alarm Monitor rods and plant reactivity for possible excursion Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	SFM	Acknowledge reports on PK03-21 Directs BOPCO to select S106 to B Only Directs actions of control room pre AR PK03-21

Op-Test No.:__2__ Scenario No.: ____3_____ Event No.: ____2 & 3____ Page __2__ of __5__

Event Description : LTBV (FCV-230) Fail Open

Time	Position	Applicant's Actions or Behavior
	BOP	Acknowledge and report PK10-07 Announce FCV-230 open Coordinate with RO to stabilize plant Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	RO	Acknowledge and report PK10-07 Announce runback Coordinate with BOPCO to stabilize plant Resets C-7 signal as directed Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	SFM	Acknowledges report on FCV-230 opening and alarms Enters AP-25 and directs control room response to stabilize plant Directs RO to reset Steam Dump C-7 signal Contacts Asset Team for assistance

Op-Test No.:__2__ Scenario No.: ____3_____ Event No.: ____4____ Page __3__ of __5__

Event Description : RCP 1-1 #2 Seal Failure

Time	Position	Applicant's Actions or Behavior
	BOP	Acknowledge seal leakoff alarm PK05-01 and report Report Seal Leakoff to #2 seal high and to #1 low Closely monitor primary and secondary parameters for proper response
	RO	Acknowledge seal leakoff alarm PK05-01 and report Coordinate with BOPCO and Aux Board on leak determination Maintain seal injection and PZR level within limits Commence load ramp as directed Closely monitor primary and secondary parameters for proper response
	SFM	Acknowledge alarm and leakoff high on #2 Seal Guide and direct response per PK05-01 Direct power reduction as necessary

Op-Test No.:___2____ Scenario No.: _____3_____ Event No.: ____5 & 6____ Page __4__ of __5__

Event Description: RCP 1-1 #1 Seal Failure and controlled shutdown

Time	Position	Applicant's Actions or Behavior
	BOP	Reports seal leakoff to #1 Seal increased to 7 gpm Coordinates with RO on power reduction Trip RCP if directed ** Critical Task** Close RCP Seal Leakoff valve within 3-5 minutes of RCP trip if directed ** Critical Task** Monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	RO	Borate as necessary for plant shutdown Commence ramp for plant shutdown Closely monitor primary and secondary parameters for proper response Keep SFM appraised of plant conditions and status
	SFM	Acknowledge increased leakoff on #1 seal Direct response per PK05-01 Determine plant shutdown required Tailboard shutdown Directs BOPCO to trip RCP 1-1 if seal leak off > 8 gpm ** Critical Task** Directs BOPCO to close seal leakoff valve within 3-5 minutes after RCP Trip ** Critical Task** Requests Asset Team assistance Directs and monitors control room response

Op-Test No.:___2__ Scenario No.: ____3_____ Event No.: ____7, 8 & 9 ___ Page __5__ of __5__

Event Description: Seismic W/LOCA and Loss of RWST

Time	Position	Applicant's Actions or Behavior
	BOP	Perform Immediate Actions of E-0 Perform actions of E-0 as directed Perform actions of E-1 and ECA-1.1
	RO	Perform Immediate Actions of E-0 Perform actions of E-0 as directed Determine and report no injection flow and cavitation on ECCS pumps Secure ECCS pumps as directed ** Critical Task** Recommend NOT securing RCPs on loss of subcooling w/o CCPs ** Critical Task** Perform actions of E-1 and ECA-1.1 as directed
	SFM	Directs control room response per E-0 Directs outside control room response to no ECCS flow Directs RO to secure ECCS pumps **Critical Task** Does NOT trip RCPs based on subcooling and CCP condition ** Critical Task** Transitions to E-1 and directs control room response Transitions to ECA-1.1 and directs control room response

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: ADMNRC – 01

Title: PERFORM SEALED VALVE CHECKLIST FOR CONTAINMENT SPRAY PUMP 1-1

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments: **RCA Entry**

References: OP K-10C, Sealed Valve Checklist for Containment Spray Sytem, Rev. 9

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 10 minutes

Critical Steps: 2,3,4,5,6

Job Designation: RO/SRO

KA Number: G2.1.22, Ability to Determine Mode of Operation

Rating: 2.8/3.3

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: OP K-10C, Sealed Valve Checklist for Containment Spray System

Initial Conditions: Unit 1 is operating at 100%. OP K-10C is in progress with 1st Check completed and most of the Independent Verification completed, with the exception of CSP 1-1.

Initiating Cue: The SFM has directed you to complete the Independent Verification for Containment Spray Pump 1-1 per OP K-10C, Sealed Valve Checklist for Containment Spray Systems.

Task Standard: The Sealed Valve Checklist is completed and ready for SFM review.

Start Time: _____

Step	Expected Operator Actions
1.Review OP K-10C.	1.1 Obtains correct procedure. 1.2 Reviews Prerequisites and Precautions and Limitations. ********** **Cue: Give copy of procedure to Candidate** ********** **Step was: SAT: ____ Unsat _____***
2.** Verifies CS 1- 8999A Sealed Open.	2.1 Locates CS 1 – 8999A, CSP 1-1 suction. 2.2 Verifies valve Sealed Open. **Step was: SAT: ____ Unsat _____***
3.** Verifies CS 1- 9000A Sealed Closed.	3.1 Locates CS 1 – 9000A, CSP 1-1 SIS test line stop. 3.2 Verifies valve Sealed Closed. **Step was: SAT: ____ Unsat _____***
4.** Verifies CS 1- 43 Sealed Open.	4.1 Locates CS 1 – 43, CSP 1-1 Eductor stop. 4.2 Verifies valve Sealed Open. **Step was: SAT: ____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Step	Expected Operator Actions
5.** Verifies CS 1- 8997A Sealed Open	5.1 Locates CS 1 – 8997A, Spray Add Tank Outlet stop. 5.2 Verifies valve Sealed Open **Step was: SAT: ____ Unsat _____***
6.** Verifies CS 1- 9015A Sealed Open	6.1 Locates CS 1 – 9015A, CSP 1-1 Discharge stop. ********** **Cue: Inform operator the seal is missing. If asked position of valve, the valve is open** ********** 6.2 Notes valve seal missing 6.3 Notes position of valve and marks it on form. 6.4 Contacts SFM and reports valve position and seal discrepancy and asks for instructions **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (record on cover sheet)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 is operating at 100%. OP K-10C is in progress with 1st Check completed and most of the Independent Verification completed, with the exception of CSP 1-1.

Initiating Cue: The SFM has directed you to complete the Independent Verification for Containment Spray Pump 1-1 per OP K-10C, Sealed Valve Checklist for Containment Spray Systems.

Task Standard: The Sealed Valve Checklist is completed and ready for SFM review.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: ADMNRC-02

Title: DETERMINE QUADRANT POWER TILT RATIO

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: STP R-25, Calculation of Quadrant Power Tilt Ratio, Rev. 20

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 5 minutes

Critical Steps: 6, 8, 9, 10

Job Designation: RO/SRO

KA Number: G2.1.7 Ability to Evaluate Plant Performance and Make Operational Judgements

Rating: 3.7/4.4

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: PPC and a copy of STP R-25.

Initial Conditions: Unit 1 is operating at 100% power. Power range nuclear instrument calibration (STP I-2D) is to begin, starting with N41. The PPC is available. ALL power range NIs are OPERABLE.

Initiating Cue: A QPTR is needed prior to starting the calibration. The Shift Foreman has directed you to perform the QPTR.

Task Standard: Perform a QPTR.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References STP R-25. **Note: May review the scope, frequency, and Technical Specifications.** **Step was: Sat: _____ Unsat _____***
2. Start data section.	2.1 Enters data for unit, operating MODE, and date/time. **Step was: Sat: _____ Unsat _____***
3. Review precautions and limitations.	3.1 Reviews and initials precautions and limitations. **Step was: Sat: _____ Unsat _____***
4. Review prerequisites.	4.1 Reviews and initials prerequisites. **Step was: Sat: _____ Unsat _____***
5. Determine power level.	5.1 Records approximate power level at step 12.1. **Step was: Sat: _____ Unsat _____***
6. ** Check power range detectors OPERABLE.	6.1 Determines all four detectors are OPERABLE and checks N/A for step 12.2. **Step was: Sat: _____ Unsat _____***
7. Prepare for QPTR on PPC.	7.1 Observes NOTE prior to step 12.3, checks step 12.3, and begins QPTR. **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

8. ** Access data.	8.1 Accesses GRPDIS on PPC and displays OP R-25 on 60 second update OR GRPDIS using QPTRTRAC on 60 second update, and initials step. **Step was: Sat: _____ Unsat _____***
9. ** Verify Data points good.	9.1 Verifies all data points good and initials step. **Step was: Sat: _____ Unsat _____***
10. ** Record indicated detector currents.	10.1 Records currents for step 12.3.3. 10.2 Records highest current for step 12.3.4. **Step was: Sat: _____ Unsat _____***
11. Complete personal data portion of STP.	11.1 Places name, date, time, and initials step 12.6. **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

Note: Instructor needs to evaluate the examinee's data sheet. Values do not have to be exactly the same, but need to be close enough to result in a final QPTR that is acceptable.

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 is operating at 100% power. Power range nuclear instrument calibration (STP I-2D) is to begin, starting with N41. The PPC is available. ALL power range NIs are OPERABLE.

Initiating Cue: A QPTR is needed prior to starting the calibration. The Shift Foreman has directed you to perform the QPTR.

Task Standard: Perform a QPTR.

- ❑ Initialize the simulator to IC-1 (100%, BOL).
- ❑ Inform the examiner that the simulator setup is complete.
- ❑ Go to RUN when the examinee is given the cue sheet.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

Job Performance Measure

Number: ADMNRC-03RO

Title: Annunciator Problem Evaluation

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: OP1.DC24, Control of Main Annunciator System Problems
AR PK03-10
AR A0542485

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 20 minutes

Critical Steps: 2,3,4,5,6,7

Job Designation: RO/SRO

KA Number: G2.2.11

Rating: 2.5/3.4

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

REV. 0

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: Copy of OP1.DC24, Control of Main Annunciator System Problems

Initial Conditions: Unit 2 is at 100% power. Alarm PK03-10 has been in alarm continually from input 464. An AR has been written, # A0542485 and The Control Room Asset Team has been contacted. The SFM had N-41B removed from the QPTR calculation at the NI cabinet, which stopped the alarm. No evolutions are planned and no equipment is out of service.

Initiating Cue: The Unit 2 SFM has directed you to use OP1.DC24, steps 5.2 and 5.3 and fill in the Annunciator Problem Evaluation Sheet and any associated paperwork as required.

Task Standard: OP1.DC24 paperwork filled out appropriately.

Start Time: _____

	Step		Expected Operator Actions
1.	Reviews procedure	1.1	References OP1.DC24
		1.2	Reads steps 5.2 and 5.3
		1.3	Reviews Attachments 7.1 and 7.2
			Step SAT:_____ UNSAT:_____*
2.	** Fills out known information on Attachment 7.1, Evaluation Sheet	2.1	Performs the following: • Checks Unit 2 • Today's Date • PK03-10 • Input # 464 • AR# A0542482 • Checks NO on Standing and Failed Alarms • Checks YES on Continual Alarm **Step SAT:_____ UNSAT:_____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

	Step		Expected Operator Actions
3.	** Verifies alarm is used to satisfy Tech Spec requirement (#1) and provides warning that equipment is inoperable (#2).	3.1	References ITS 3.2.4 and ECG 37.3 and determines the alarm is ITS related and checks both ITS boxes and implements TS Tracking Sheet. ********** **CUE: TS Tracking Sheet will be implemented by the SCO.** ********** **Step SAT:_____ UNSAT:_____***
4.	** Verifies other alarms do NOT have reflash input to this alarm (#3), that equipment monitored can cause a Plant Trip (#4), and the alarm is redundant (#5).	4.1	Determines alarm does NOT have multiple inputs from other sources and an Annunciator Defeat Log is required. (critical component)
		4.2	Determines alarm monitors equipment that could cause a trip and there are redundant alarms. **Step SAT:_____ UNSAT:_____***
5.	** Determines: • Compensatory Measures • Watchstation • Frequency	5.1	Reviews ITS 3.2.4 and ECG37.3 and determines that compensatory measures require QPTR every 12 hours by either the BOPCO, CO or SCO. **Step SAT:_____ UNSAT:_____***
6.	** Complete form	6.1	Places sticker on PK03-10, initials and signs form. **Step SAT:_____ UNSAT:_____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Step		Expected Operator Actions
7. ** Fills in appropriate portions of the Annuciator Defeat Log	7.1	Fills in: • AR # A0542485 • PK03-10 • Alarm Input 464 • Other: Alarm defeated by removing N-41B from QPTR calculation on Misc. Equipment & Control Panel at the NI racks behind VB-3 on Unit 2 (words similar to this effect) • Reference Drawing # 45209 (not critical) • Prepared by and date/time **Step SAT:_____ UNSAT:_____*** _____

Stop Time: _____

Total Time: _____

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 2 is at 100% power. Alarm PK03-10 has been in alarm continually from input 464. An AR has been written, # A0542485 and The Control Room Asset Team has been contacted. The SFM had N-41B removed from the QPTR calculation at the NI cabinet, which stopped the alarm. No evolutions are planned and no equipment is out of service.

Initiating Cue: The Unit 2 SFM has directed you to use OP1.DC24, steps 5.2 and 5.3 and fill in the Annunciator Problem Evaluation Sheet and any associated paperwork as required.

Task Standard: OP1.DC24 paperwork filled out appropriately.

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

ATTACHMENT 7.1

TITLE: Annunciator Problem Evaluation Sheet

UNIT 1[ ] 2[***X***] DATE _____ PK # ***03-10*** ALARM INPUT # ***464***

AR# ***A0542485***

	YES	NO
STANDING ALARM	[ ]	[***X***]
FAILED ALARM	[ ]	[***X***]
CONTINUAL ALARM	[***X***]*	[ ]

1.	Is this alarm input utilized to satisfy Tech. Spec. Surveillance Requirements? (If yes is checked, implement Tech. Spec. Tracking Sheet in accordance with OP1.DC17.)	[***X***]	[ ]
2.	Does this alarm provide warning that equipment required by the Tech. Specs. may be inoperable?	[***X***]	[ ]
3.	Do other alarm contacts to this input have reflash capability?	[ ]	[***X***]*
4.	Does this alarm monitor equipment which could cause a Plant Trip if a failure were to occur?	[***X***]	[ ]
5.	Is this alarm redundant to similar alarms on same equipment?	[***X***]	[ ]

COMPENSATORY MEASURES: ***Perform T.S. Surveillance requirements of 4.2.4.1.b per ECG 37.3. (Perform QPTR once per shift).***

WATCHSTATION: ***BOPCO/CO/SCO*** FREQUENCY: ***Once per shift*** (not > SHIFTLY)

COMMENTS: _____

AR STICKER PLACED ON PK# ***03-10*** BY _____ INIT

PREPARED BY APPROVED BY (SFM)

* If these boxes are checked, initiate Annunciator Defeat Log (Attachment 7.1) when determined to be appropriate by the Shift Foreman. If the Annunciator Defeat Log is not initiated, state the reason.

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

ATTACHMENT 7.2

TITLE: Annunciator Defeat Log

PREPARATION

Action Request # ***A0542485*** AR PK # ***03-10*** Alarm Input # ***464***

Description of Defeat: (Indicate method, panel # or location, device #, terminal or contact # as applicable)

	Y	N
Jumper/Lifter Lead	[ ]	[*X*]
Removed From Scan	[ ]	[*X*]

Other: ***Alarm defeated by removing N-41B from QPTR calculation on Misc. Equipment & Control Panel at the NI racks behind VB-3 on Unit 2.***

Reference Drawing Number: ***452094***

Prepared By: _____ Date/Time: _____

Authorized By: (Shift Manager) _____ Date/Time: _____

DEFEAT

Defeated By: _____ Date/Time: _____

Verified By: _____ Date/Time: _____

Alarm Removed from Scan: Initials _____

Info Tag hung at Annunciator Maintenance Terminal for all alarms removed from scan:

Initials: _____ Location: _____

AR Updated: (Indicate alarm defeated. For jumper or lifted lead, indicate the location and that an Info Tag was attached).

Initials: _____

RESTORATION

Restored By: _____ Date/Time: _____

Verified By: _____ Date/Time: _____

Info Tag Removed:

Initials: _____

AR Updated: (Indicate Info Tag removed and Attachment 7.2 has been closed out.)

Initials: _____

Repair/Removal W/O # _____

Alarm Returned to Scan: Initials: _____

Removal Noted By: (C.O.) _____ Date/Time: _____

ATTACHMENT 7.3

TITLE: Annunciator Problems Index

UNIT ***2*** CURRENT YEAR ***This Year*** PAGE ***1*** OF ***1***

PK NO.	WINDOW NO.	DATE ON	DATE OFF	AR NO.	EQUIPMENT AFFECTED	COMP MEAS Y/N
03	***10***	***Today***		***A0542485***	***N-41B and QPTR Calc.***	***Y***

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

Job Performance Measure

Number: ADMNRC-03SRO

Title: Review of Annunciator Problem Evaluation

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: OP1.DC24, Control of Main Annunciator System Problems
AR PK03-10
AR A0542485

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 10 minutes

Critical Steps: 2,3,4,5

Job Designation: SRO

Task Number: G2.2.11

Rating: 3.4

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

REV. 0

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: OP1.DC24, Control of Main Annunciator System Problems
AR PK03-10
AR A0542485

Initial Conditions: Unit 2 is at 100% power. Alarm PK03-10 has been in alarm continually from input 464. An AR has been written, # A0542485 and The Control Room Asset Team has been contacted. N-41B (lower) has been removed from the QPTR calculation at the NI cabinet. No evolutions are planned and no equipment is out of service.

Initiating Cue: The Unit 2 CO has performed OP1.DC24, steps 5.2 and 5.3 and filled in the Annunciator Problem Evaluation Sheet and the Preparation portion of the Annunciator Defeat log and has given them to you for review.

Task Standard: OP1.DC24 paperwork reviewed and filled out appropriately.

Start Time: _____

	Step		Expected Operator Actions
1.	Reviews procedure	1.1	References OP1.DC24
		1.2	Reads steps 5.2 and 5.3
		1.3	Reviews Attachments 7.1 and 7.2
			Step SAT:_____ UNSAT:_____*
2.	** Verifies correct heading on Annunciator Problem Evaluation Sheet	2.1	Notes correct entries: • Unit 2 • Today's Date • PK03-10 • Input # 464 • AR# A0542482 • NO checked on Standing and Failed Alarms • YES checked on Continual Alarm **Step SAT:_____ UNSAT:_____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Step		Expected Operator Actions
3. ** Verifies 1 through 5 checked appropriately.	3.1	Notes 1, 2, 4 and 5 checked YES, 3 checked NO.
	3.2	Checks for TS Tracking sheet
	3.3	Checks for Annunciator Defeat Log ********** **CUE: TS Tracking Sheet will be implemented by the SCO.** ********** **Step SAT:_____ UNSAT:_____***
4. ** Verifies Compensatory measures correct and appropriate.	4.1	Determines ECG reference and Watchstation correct, but ITS surveillance incorrect: • Should be SR 3.2.4.2, NOT 4.2.4.1.b • Should be QPTR surveillance every 12 hours, NOT every 7 days. (critical component)
	4.2	Makes corrections to forms and approves Problem Evaluation Sheet. **Step SAT:_____ UNSAT:_____***
5. ** Verifies Annunciator Defeat Log is correct	5.1	Determines AR number incorrect and makes correction. (A0542485 NOT A0524285)
	5.2	Determines AR PK # incorrect and corrects. (03-10 NOT 03-01)
	5.3	Determines Jumper and Removed from Scan boxes marked NO correctly.
	5.4	Determines incorrect description in OTHER and makes correction. (Removed N-41B (lower), NOT N-41A (upper) on NI panel)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Step		Expected Operator Actions
	5.5	Approves Defeat log **Step SAT:_____ UNSAT:_____***

Stop Time: _____

Total Time: _____

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 2 is at 100% power. Alarm PK03-10 has been in alarm continually from input 464. An AR has been written, # A0542485 and The Control Room Asset Team has been contacted. N-41B (lower) has been removed from the QPTR calculation at the NI cabinet. No evolutions are planned and no equipment is out of service.

Initiating Cue: The Unit 2 CO has performed OP1.DC24, steps 5.2 and 5.3 and filled in the Annunciator Problem Evaluation Sheet and the Preparation portion of the Annunciator Defeat log and has given them to you for review.

Task Standard: OP1.DC24 paperwork reviewed and filled out appropriately.

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

ATTACHMENT 7.1

TITLE: Annunciator Problem Evaluation Sheet

UNIT 1[ ] 2[***X***] DATE _____ PK # ***03-10*** ALARM INPUT # ***464***

AR# ***A0542485***

	YES	NO
STANDING ALARM	[ ]	[***X***]
FAILED ALARM	[ ]	[***X***]
CONTINUAL ALARM	[***X***]*	[ ]

1.	Is this alarm input utilized to satisfy Tech. Spec. Surveillance Requirements? (If yes is checked, implement Tech. Spec. Tracking Sheet in accordance with OP1.DC17.)	[***X***]	[ ]
2.	Does this alarm provide warning that equipment required by the Tech. Specs. may be inoperable?	[***X***]	[ ]
3.	Do other alarm contacts to this input have reflash capability?	[ ]	[***X***]*
4.	Does this alarm monitor equipment which could cause a Plant Trip if a failure were to occur?	[***X***]	[ ]
5.	Is this alarm redundant to similar alarms on same equipment?	[***X***]	[ ]

COMPENSATORY MEASURES: ***Perform T.S. Surveillance requirements of 4.2.4.1.b per ECG 37.3. (Perform QPTR once per shift).***

WATCHSTATION: ***BOPCO/CO/SCO*** FREQUENCY: ***Every 7 days*** (not > SHIFTLY)

COMMENTS: _____

AR STICKER PLACED ON PK# ***03-10*** BY *JO*
INIT

Joe Operator
PREPARED BY APPROVED BY (SFM)

* If these boxes are checked, initiate Annunciator Defeat Log (Attachment 7.1) when determined to be appropriate by the Shift Foreman. If the Annunciator Defeat Log is not initiated, state the reason.

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

ATTACHMENT 7.2

TITLE: Annunciator Defeat Log

PREPARATION

Action Request # ***A0524285*** AR PK # ***03-01*** Alarm Input # ***464***

Description of Defeat: (Indicate method, panel # or location, device #, terminal or contact # as applicable)

	Y	N
Jumper/Lifter Lead	[ ]	[*X*]
Removed From Scan	[ ]	[*X*]

Other: ***Alarm defeated by removing N-41A (upper) from QPTR calculation on Misc. Equipment & Control Panel at the NI racks behind VB-3 on Unit 2.***

Reference Drawing Number: ***452094***

Prepared By: _____ Date/Time: _____

Authorized By: (Shift Manager) _____ Date/Time: _____

DEFEAT

Defeated By: _____ Date/Time: _____

Verified By: _____ Date/Time: _____

Alarm Removed from Scan: Initials _____

Info Tag hung at Annunciator Maintenance Terminal for all alarms removed from scan:

Initials: _____ Location: _____

AR Updated: (Indicate alarm defeated. For jumper or lifted lead, indicate the location and that an Info Tag was attached).

Initials: _____

RESTORATION

Restored By: _____ Date/Time: _____

Verified By: _____ Date/Time: _____

Info Tag Removed:

Initials: _____

AR Updated: (Indicate Info Tag removed and Attachment 7.2 has been closed out.)

Initials: _____

Repair/Removal W/O # _____

Alarm Returned to Scan: Initials: _____

Removal Noted By: (C.O.) _____ Date/Time: _____

ATTACHMENT 7.3

TITLE: Annunciator Problems Index

UNIT ***2*** CURRENT YEAR ***This Year*** PAGE ***1*** OF ***1***

PK NO.	WINDOW NO.	DATE ON	DATE OFF	AR NO.	EQUIPMENT AFFECTED	COMP MEAS Y/N
03	***10***	***Today***		***A0542485***	***N-41B (lower) and QPTR Calc.***	***Y***

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: ADMNRC-04

Title: Perform personnel frisk upon exiting Surface Contamination Area (SCA)

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments: **Perform while in RCA**

References: RP1.ID9, Radiation Work Permits, Attachment 9.1, Rev. 4; RCP D-911, Operation of Eberline Count Rate Meters, Rev. 3; RCP D-600, Personnel Decontamination and Evaluation, Rev. 19

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 10 Minutes

Critical Steps: 1, 2, 3, 4

Job Designation: RO/SRO

Task Number: G2.3.4

Rating: 2.5/3.1

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. The examinee may be given the procedure and told the step with which to begin.

Required Materials: RM-14 or RM-3C-4 personnel frisker

Initial Conditions: While performing an inspection of CCP 1-3, you discovered water on the floor by the pump discharge pulsation damper vent, 1-8391. You stopped the leak by tightening the isolation valve. You contacted Radiation Protection and informed them of the situation.

Initiating Cue: RP has requested you perform a Hand and Foot survey, in accordance with RP1.ID9, to verify you are not contaminated.

Task Standard: Hand and Foot survey completed in accordance with RP1.ID9.

Start Time: _____

Step	Expected Operator Actions
1. **Operator operates detector per RCP D-911 & RCP D-600.	1.1 Operator verifies that power is available. (Either battery check or plugged in to 120VAC power supply.) 1.2 Operator verifies that the detector is in the X1 or X10 scale positions. **Note: The X1 or X10 scales may be used per RCP D-600.** 1.3 Operator verifies background radiation is <300cpm. **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Step	Expected Operator Actions
2. **Operator performs personnel frisk.	2.1 Operator performs frisk of Hands. 2.2 Operator performs frisk of feet. ********** **Cue: Red alarm light is lit and audible alarm is heard.** ********** **Step was: Sat: _____ Unsat _____***
3. **Operator contacts Radiation Protection.	3.1 Operator contacts Access Senior. **Note: Operator does not need to actually contact the Access Senior, task complete when a phone is located and operator tells evaluator who he would be contacting.** **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: While performing an inspection of CCP 1-3, you discovered water on the floor by the pump discharge pulsation damper vent, 1-8391. You stopped the leak by tightening the isolation valve. You contacted Radiation Protection and informed them of the situation.

Initiating Cue: RP has requested you perform a Hand and Foot survey, in accordance with RP1.ID9, to verify you are not contaminated.

Task Standard: Hand and Foot survey completed in accordance with RP1.ID9.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: ADMNRC-05SRO

Title: PERFORM AN OFF-SITE DOSE ASSESSMENT - SGTR WITH A 10% STEAM DUMP LIFT

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

This JPM does NOT need to be performed in the simulator. It can be performed in the Control Room or in a classroom with the Cues.

References: EP G-1, Accident Classification and Emergency Plan Activation, Rev. 31
EP R-2, Release of Airborne Radioactive Materials Initial Assessment, Rev. 19

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 15 minutes

Critical Steps: 2, 3, 5

Job Designation: SRO

KA Number: G2.4.41 Knowledge of Emergency Action Levels thresholds and classifications

Rating: 4.1

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

REV. 0

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: Calculator

Initial Conditions: Unit 1 experienced a SGTR in steam generator 14.

Initiating Cue: EOP E-3 is in progress. During the event, it was noted that the 10% steam dump on steam generator 14 had opened for approximately 12 minutes and was manually isolated. The Shift Manager directs you to perform a dose assessment and recommend an emergency classification, based on your dose assessment. The PPC program for R-2 calculations is unavailable.

Task Standard: Dose assessed and a recommendation made for the emergency classification.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References EP R-2. **Step was: Sat: _____ Unsat: _____***
2. ** Determine the total effluent release rate.	2.1 References Attachment 10.1, page 3, of EP R-2. 2.2 Fills out section 1 and notes the CAUTION referencing RE-74 readings. 2.3 Determines RE-74 reading from trend recorder or radiation monitor. ********** **Cue: RE-74 reading is 200 cpm.** ********** 2.4 Determines SG level from LI-547. ********** **Cue: LI-547 reading is 80%.** ********** 2.5 Determines SG flowrate from FI-542. ********** **Cue: FI-542 reading is 0%.** ********** 2.6 Uses alternate steam flow rate of 4.0 E+5 lbm/hr. 2.7 Determines monitor factor is 6.75 E-10. 2.8 Determines total effluent release rate of 0.054 ci/sec. **Step was: Sat: _____ Unsat: _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

3. ** Perform dose calculations.	3.1 References Attachment 10.2 of EP R-2. 3.2 Obtains met data from PPC. ********** **Cue: X/Q reading is 3.93 E-04 sec/m^3.** ********** 3.3 Determines DCF to be 4.3 E+4 (SG - Normal). 3.4 Calculates TEDE rate of 0.91 mR/hr, and a total dose of 0.182 mR. 3.5 Calculates thyroid CDE rate of 3.18 mR/hr and a total dose of 0.636 mR. **Step was: Sat: _____ Unsat: _____***
4. Obtain the correct procedure.	4.1 References EP G-1. **Step was: Sat: _____ Unsat: _____***
5. ** Recommend event classification.	5.1 Recommends event classification as a notification as an Alert #4 per EP G-1. **Step was: Sat: _____ Unsat: _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 experienced a SGTR in steam generator 14.

Initiating Cue: EOP E-3 is in progress. During the event, it was noted that the 10% steam dump on steam generator 14 had opened for approximately 12 minutes and was manually isolated. The Shift Manager directs you to perform a dose assessment and recommend an emergency classification, based on your dose assessment. The PPC program for R-2 calculations is unavailable.

Task Standard: Dose assessed and a recommendation made for the emergency classification.

- ❑ Initialize the simulator to IC-1 (100%, BOL).
- ❑ Enter drill file 1150 or manually insert the following:

Command	Description
1. mal rcs4d act,100,0,0,d,0	100 gpm SG 14 tube leak
2. mal ppl2a act,0,0,40,d,2	Inadvertent SI, train A
3. mal ppl2b act,0,0,40,d,2	Inadvertent SI, train B
4. mal mss6d act,100,0,0,d,200	Fails open SG 14 safety valve for 200 seconds
5. cnv mss25 2,1,0,0,c,fnispr.lt.10,0	Fails PCV-22 SG 14 10% stm dump vlv open
6. xmt rms43 3,200,0,0,c,fnispr.lt.10,0	Fails RE-74 main steam line radiation monitor to 200 cpm
7. xmt mfw40 3,81,120,0,c,fnispr.lt.10,0	SG 14 NR level (LI-547) to 81%
8. xmt mfw43 3,80,120,0,c,fnispr.lt.10,0	SG 14 NR level (LI-548) to 80%
9. xmt mfw46 3,79,120,0,c,fnispr.lt.10,0	SG 14 NR level (LI-549) to 79%
10. xmt mfw12 3,94,120,0,c,fnispr.lt.10,0	SG 14 WR level (LR-537) to 94%
11. set cmetchiq=3.93E-04	Sets CHI/Q @ 3.93E-04
12. ovr xc3i136m act,1,0,0,c,fnispr.lt.10,0	Takes FWRVs to manual and close
13. ovr xc3i136L act,1,0,0,c,fnispr.lt.10,0	"
14. ovr xc3i137M act,1,0,0,c,fnispr.lt.10,0	"
15. ovr xc3i137L act,1,0,0,c,fnispr.lt.10,0	"
16. ovr xc3i138M act,1,0,0,c,fnispr.lt.10,0	"
17. ovr xc3i138L act,1,0,0,c,fnispr.lt.10,0	"
18. ovr xc3i139M act,1,0,0,c,fnispr.lt.10,0	"
19. ovr xc3i139L act,1,0,0,c,fnispr.lt.10,0	"
20. pmp cnd6 3,0,0,0,d,0	Blocks AUTO/MAN start CND/BSTR PP 1-3
21. ovr xc3i224o ACT,1,0,0,c,fnispr.lt.10,0	Stops CND/BSTR PP 1-2
22. ovr xc3i194C ACT,1,0,0,c,fnispr.lt.10,0	Places FCV-53 in RECIRC
23. ovr xc3i197C ACT,1,0,0,c,fnispr.lt.10,0	Places FCV-54 in RECIRC
24. vlv afw3 2,0.015,0,0,d,0	Throttles AFW PP 1-1 LCVs
25. vlv afw4 2,0.015,0,0,d,0	"

26. vlv afw5 2,0.015,0,0,d,0	Throttles AFW PP 1-1 LCVs
27. vlv mss10 2,0,0,120,c,fnispr.lt.10,0	Closes MSIV 4
28. loa mss16 ACT,0,60,100,c,fnispr.lt.5,0	Isolates PCV-22 SG 14 10% stm dump vlv
29. vlv sgb8 2,0,0,60,c,fnispr.lt.5,0	Closes I.C. blowdown isolation vlv (FCV-763)
30. vlv afw6 2,0,0,0,d,0	Closes AFW pp 1-1 LCV-109
31. cnv afw4 2,0,10,0,c,fnispr.lt.5,0	Places LCV-113 in manual and closes vlv
32. ovr xv3o152a act,0,0,10,c,fnispr.lt.5,0	"
33. ovr xv30152m act,0,0,10,c,fnispr.lt.5,0	"
34. ovr xv2I357c act,0,0,0,d,0	Cuts out TE-443 to SMM
35. run 210	Freezes simulator after 210 seconds

- ❑ Perform the following, while the simulator is running:
  1. Place FCV-53/54 in RECIRC.
  2. Place CND/BST pp set 1-3 in manual.
  3. Verify MSR vlvs are closed (hit RESET to close vlvs).
  4. Set PCV-22 10% steam dump pot to 8.67 turns.
  5. Display METP on the PPC.
- ❑ Inform the examiner that the simulator setup is complete.
- ❑ EXAMINER'S DISCRETION: Go to RUN when the examinee is given the cue sheet.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

Job Performance Measure

Number: ADMNRC-06RO

Title: PERFORM SHUTDOWN MARGIN CALCULATION

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: STP R-19, Shutdown Margin Determination

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 15 minutes

Critical Steps: 4,5,6,7,8,9

Job Designation: RO/SRO

KA Number: G2.1.25, Ability to Obtain and Interpret Station Reference Material

Rating: 2.8/3.1

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: Copy of STP R-19, Shutdown Margin Determination

Initial Conditions: Unit 1 tripped from 100% power 23 hours ago. Rod K6 did not insert into the core and is stuck at 220 steps. Current conditions are: T_{AVG} = 548°F, C_B = 1356, Core Burnup = 127 MWD/MTU.

Initiating Cue: The SFM has assigned you to manually perform STP R-19, Shutdown Margin Determination, taking NO credit for Xe/Sm and without APEX.

Task Standard: A completed SDM Determination ready for SFM review.

Start Time: _____

	Step		Expected Operator Actions
1.	Reviews Start Data Section	1.1	Fills in Unit (1), Mode (3) and Date/Time
		1.2	Reviews Precautions and Limitations and initials
			Step SAT:_____ UNSAT:_____*
2.	Determines which data sheet	2.1	Determines data sheet 2 of STP R-19 must be used and initials
		2.2	Reads and initials information concerning data sheet 2
			NOTE: May enter Remark noting this is a Xe/SM calculation.
			Step SAT:_____ UNSAT:_____*
3.	Completes Section A of Data Sheet 2	3.1	Fills in:
			Unit 1, Cycle 12, Mode 3, Today's Date and Time
			Step SAT:_____ UNSAT:_____*
4.	** Completes Section B	4.1	Fills in:
			T_{AVG} = 548°F, C_B = 1356, Core Burnup = 127 MWD/MTU, Time since Shutdown = 23 hours
			Step SAT:_____ UNSAT:_____*

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Step		Expected Operator Actions
5. ** Completes Section C	51	Determines Section C is N/A and enters 0 in Step C.4 **Step SAT:_____ UNSAT:_____***
6. ** Completes Section D	6.1	Determines: • Most reactive rod worth = 680 pcm • Stuck rods = 1 • Total stuck rod worth = 680 pcm • Worth of withdrawn rod is N/A CUE: When asked physics testing data on stuck rod, feedback this will not be included in the calculation and to mark it N/A.
	6.2	Determines total stuck rod worth is 680 pcm **Step SAT:_____ UNSAT:_____***
7. ** Completes Section E	7.1	Determines Section E does not apply and marks N/A **Step SAT:_____ UNSAT:_____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Step		Expected Operator Actions	
8.	** Completes Section F	8.1	Determines: • Minimum C_B to 548°F is 1211 ppm • Add 100 ppm to have 1311 ppm • Boron Worth for 1311 at 548°F = 10125 pcm • Boron worth multiplier = 1 • Total worth corrections = +680 pcm • Net required boron worth = -10805 pcm • Required C_B per BOL table = 1216 ppm **Step SAT:_____ UNSAT:_____***
9.	** Complete Section G	9.1	Determine Actual C_B of 1356 ppm > Required C_B of 1216 ppm
		9.2	Sign and present to SFM for review. **Step SAT:_____ UNSAT:_____***

Stop Time: _____

Total Time: _____

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 tripped from 100% power 23 hours ago. Rod K6 did not insert into the core and is stuck at 220 steps. Current conditions are: T_{AVG} = 548°F, C_B = 1356, Core Burnup = 127 MWD/MTU.

Initiating Cue: The SFM has assigned you to perform STP R-19, Shutdown Margin Determination, taking NO credit for Xe/Sm.

Task Standard: A completed SDM Determination ready for SFM review.

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

START DATA SECTION

UNIT ***1*** OPERATING MODE ***3*** DATE/TIME ***Today/Now***

PRECAUTIONS AND LIMITATIONS **INITIALS**

Wherever a (+) or (-) sign is given on data sheets, the correct number may be entered with no other signs. ___JO_

For the purpose of SDM verification, the plant is considered to have been at equilibrium conditions if the power level did not vary more than ±5% RTP in the 48 hours before shutdown. ___JO _

PREREQUISITES

None

PERF

PROCEDURE

Determine the correct Data Sheet or STP to use:

for MODE	With	Use	Initial Which Selected
1	Normal conditions	STP I-1A	
1	Stuck Rod(s)	STP R-19 DATA SHEET 1	
1	a Dropped Rod	STP R-19 DATA SHEET 4	
2	Normal conditions	STP I-1A	
2	ECP Criticality	STP R-17	
2	Stuck Rod(s)	STP R-19 DATA SHEET 1	
2	Physics Testing in progress	STP R-6	
2	a Dropped Rod	STP R-19 DATA SHEET 4	
3	Normal conditions	STP R-19 DATA SHEET 2 or STP I-1B	
3	Stuck Rod(s)	STP R-19 DATA SHEET 2	JO
3	Shutdown Banks Out	STP R-19 DATA SHEET 3	
3	Rod Drop Testing	STP R-19 DATA SHEET 3	
3	Physics Testing in progress	STP R-19 DATA SHEET 2	
4	Normal conditions	STP R-19 DATA SHEET 2 or STP I-1B	
4	Stuck Rod(s)	STP R-19 DATA SHEET 2	
5	Normal conditions	STP R-19 DATA SHEET 2 or STP I-1B	
5	For Mode 6 Entry	STP I-1B	
5	Stuck Rods	STP R-19 DATA SHEET 2	
6	Normal conditions	STP I-1B	

If the method is Data Sheet 2: N/A [ ]

If the reactor was not at equilibrium conditions prior to shutdown, consult Reactor Engineering before continuing. It may be necessary to calculate Xenon and Samarium worths for Section C of the Data Sheet.

N/A [ ] _____

PERF

****

CAUTION: If credit is taken for Xe/Sm, the SDM calculation must be repeated every four hours

****

For conservatism and ease of calculation, Xe/Sm may be ignored. This will increase the required boron concentration and therefore may not be desirable at EOL.

N/A [ ] ___ *JO* ___

If the "APEX" code is used to calculate xenon and samarium worths, assume "N-1" rods and no boron (see Reference 6.8 as needed).

N/A [***X***] _____

REVIEW AND ROUTING

SFM Review completed procedure. If Acceptance Criteria are not met, refer to the applicable LCO and initiate an Action Request.

AR # _____

REMARKS: ***1- 12.2.1 This R-19 is for Xe/Sm free***

Reviewed By: _____ Date/Time _____/_____
Shift Foreman

PPE (Reactor Engineering) review test for completeness and acceptability.

REMARKS: _____

Reviewed By: _____ Date _____
PPE (Reactor Engineering)

DIABLO CANYON POWER PLANT
STP R-19
ATTACHMENT 8.1

1 AND 2

TITLE: Data Sheet 1, SHUTDOWN MARGIN Calculation in MODES 1 and 2 with Stuck Control Rods*

UNIT _____ CYCLE _____ MODE _____ DATE _____ TIME _____

1. CURRENT CORE CONDITIONS (for time of SDM)
   a. Control bank position (bank/step) _____/____
   b. Boron concentration _____ ppm
   c. Power level _____% RTP
   d. Burnup (from PEP R-5) _____MWD/T
   e. Number of stuck rods** _____
2. AVAILABLE ROD WORTH FOR SHUTDOWN
   Available rod worth for shutdown from Volume 9, Section IB at control bank position (Step 1.a.) and burnup (Step 1.d.). Use Figure R19-1F-2 (Unit 1) or Figure R19-2F-2 (Unit 2) (-)_____ pcm
3. POWER DEFECT
   Total Power Defect from Volume 9, Section ID, Figure R17-1F-3 (Unit 1) or R17-2F-3 (Unit 2) at power level (Step 1.c.), boron concentration (Step 1.b.), and burnup (Step 1.d) (+)_____ pcm
4. WORTH OF STUCK ROD(S)**
   a. Most reactive rod worth from Volume 9, Section ID, Table R19-1T-1 (Unit 1) or R19-2T-1 (Unit 2) (+)_____ pcm
   b. Total stuck rod worth (Step 4.a. x Step 1.e.) (+)_____ pcm
5. AVAILABLE SHUTDOWN WORTH
   Total net worth of withdrawn rod banks, power defect and stuck RCCA's (Step 2 + Step 3 + Step 4.b)
   (-)_____ PCM
6. SHUTDOWN MARGIN
   % ΔK/K Shutdown (Step 5 ÷ (-1000)) _____%ΔK/K

	YES	NO
7. MINIMUM SHUTDOWN MARGIN DETERMINATION Is the SHUTDOWN MARGIN determined in Step 6 greater than or equal to +1.6% ΔK/K?	[ ]	[ ]

If the answer is YES, the core has sufficient SHUTDOWN MARGIN. If the answer is NO, immediately follow the appropriate Tech Spec Action Statement, notify the Shift Foreman, and submit an Action Request.

* **NOTE:** If no immovable or untrippable control rods, use STP I-1A to verify SHUTDOWN MARGIN

** **NOTE:** Stuck is defined as untrippable or immovable due to excessive friction or mechanical interference.

REMARKS: _____

PERFORMED BY _____ DATE/TIME _____/_____

REVIEWED BY _____ DATE/TIME _____/_____
hift Foreman)

REVIEWED BY _____ DATE _____
E (Reactor Engineering)

Answer Key

DIABLO CANYON POWER PLANT
STP R-19
ATTACHMENT 8.2

1 AND 2

TITLE: Data Sheet 2, SHUTDOWN MARGIN in MODES 3, 4, and 5, All Rods In or Stuck Rods

A. UNIT ***1*** CYCLE ***12*** MODE ***3*** DATE ***Today*** TIME ***Now***

WARNING : 1. With stuck* rod(s), perform this calculation within ONE hour and every 24 hours thereafter.
2. If credit is taken for Xenon (Step C.2), repeat this calculation at least every FOUR hours.

B. CURRENT CORE CONDITIONS
(At the time of this SDM Calculation)

1. RCS Temperature (TAVG) __ ***548*** ___ ºF
2. RCS Boron Concentration __***1356***___ PPM
3. Core Avg Burnup (PEP R-5) MWD
___***127***___ MTU
4. Time Since Plant Shutdown [ ] N/A
(N/A startup after refueling) ____***23***___ HRS

C. XENON AND SAMARIUM WORTH [***X***] N/A
__***10125***___ PCM
(If no credit is taken for Xe/Sm, check N/A, enter Ø pcm in Step C.4, and go to Step D.)

	YES	NO	N/A
1. Power history determined and attached	[ ]	[ ]	[ ]

__***10125***___ PCM

2. If at equilibrium, estimated Xenon worth from R17-1T-2 or R17-2T-2 (–) _____
Circle Table per B.3: BOL MOL EOL
__***10805***____ PCM
3. If at equilibrium, Samarium worth from R17-1T-3 or R17-2T-3 (–) _____
4. Total Xe & Sm worth (C.2 + C.3) or "APEX" output or zero (–) ____***0***_____

D. WITHDRAWN ROD/BANK WORTH (N/A if APEX) [ ] N/A
(If any rods not FULLY inserted, do not enter Ø pcm in Step D.5.)

1. Most reactive rod worth from R19-1T-1 or R19-2T-1 (+) __***680***_____ PCM
2. Number of stuck rods* ___***1***_____
3. Total stuck rod worth (D.1 x D.2) (+) __***680***_____ PCM
4. Worth of withdrawn rod/bank during physics tests N/A [ ](+) _____***0***_____ PCM
5. Total stuck and withdrawn rod worth (D.3 + D.4) (+) ___***680***____ PCM
(not zero if any rods out)
_____ PCM

E. SDM REQUIREMENT CORRECTION [***X***] N/A

1. If this SDM calculation is for MODE 5 (B.1 ≤ 200ºF), enter -600 pcm, or check N/A ( ) _____ PCM
_____ %

F. REQUIRED BORON CONCENTRATION

1. Minimum required boron concentration for Temp B.1 and burnup B.3 from R19-1T-2 or R19-2T-2 __***1211***____ PPM
2. Add 100 PPM to concentration F.1 __***1311***____ PPM
NOTE: If Steps C, D & E = N/A, skip to F.8 and enter concentration F.2
3. Boron worth for concentration F.2 and Temp B.1 from R19-1T-5 or R19-2T-5 (–)
Circle Table per B.3: BOL MOL EOL
4. Boron worth multiplier for worth C.4 from R17-1F-1 or R17-2F-1 ____***1***_____
(If Step C.4 = Ø pcm, enter 1)
5. Boron worth corrected for Xe/Sm (F.3 x F.4) (–)
6. Total worth corrections (C.4 + D.5 + E.1) (**+**) __***680***_____ PCM
7. Net required boron worth (F.5 - F.6) (**-**)
If positive, enter Ø pcm
8. Required boron concentration for worth F.7, and Temp B.1 from R19-1T-5 or R19-2T-5 __***1216***____ PPM
Select Table per B.3: BOL MOL EOL

G. ACCEPTANCE CRITERIA

1. Is the actual boron concentration B.2 greater than or equal to the required concentration F.8?
[***X***] YES (ACCEPTABLE) [ ] NO (NOT ACCEPTABLE)

If this SDM is NOT ACCEPTABLE immediately follow the appropriate Tech Spec Action Statement, notify the SFM, and submit an Action Request.

H. OPTIONAL EXPLICIT SDM CALCULATION

1. Boron worth for concentration B.2 and Temp. B.1 from R19-1T-5 or R19-2T-5 (–)
Select Table per B.3: BOL MOL EOL
2. Total Present Worth (H.1 + C.4 + D.5 - 1600 pcm) (–)
3. Actual SHUTDOWN MARGIN (H.2 - F.3)/(-1000 x F.4) ( )

* Stuck is defined as untrippable or immovable due to excessive friction or mechanical interference.

REMARKS _____

STP R-19 (UNITS 1 AND 2)
ATTACHMENT 8.2

TITLE: Data Sheet 2, SHUTDOWN MARGIN in MODES 3, 4, and 5, All Rods In or Stuck Rods

PERFORMED BY *Joe Operator* DATE Today TIME Now

REVIEWED BY _____ DATE _____ TIME _____
Shift Foreman

REVIEWED BY: _____ DATE _____ TIME _____
PPE (Reactor Engineering)

DIABLO CANYON POWER PLANT
STP R-19
ATTACHMENT 8.3

1 AND 2

TITLE: Data Sheet 3, SHUTDOWN MARGIN Verification, MODE 3 to Pull or with S/D Banks Out or Rod Drop Testing

UNIT _____ CYCLE _____ DATE _____ TIME _____

This SHUTDOWN MARGIN verification is for MODE 3 to pull or with Shutdown Banks out or to perform rod drop testing.

WARNING: If Xenon is present, this calculation should be repeated at least every FOUR hours.

ACTUAL CORE CONDITIONS (at the time of SDM calculation)

a. Core average cycle burnup (PEP R-5) _____ MWD/T
b. Moderator average temperature (Tavg) _____ °F
c. RCS boron concentration _____ ppm

MINIMUM REQUIRED BORON CONCENTRATION

a. Obtain the MINIMUM REQUIRED BORON CONCENTRATION for MODE 6 listed on Table R19-1(2)T-1 or perform an ECP calculation per STP R-17. Assume rods are at or above the zero power rod insertion limit for R-17.
b. Required boron concentration determined in Step 2.a. above. Attach R-17 calculation if performed _____ ppm

		YES	NO
c.	Is the actual boron concentration in the core (Step 1.c) greater than or equal to the required boron concentration (Step 2.b)?	[ ]	[ ]
d.	Is the moderator average temperature (Step 1.b) equal to or greater than 541°F?	[ ]	[ ]

SHUTDOWN MARGIN ACCEPTABILITY

Answers to 2.c and 2.d:
[ ] both YES (ACCEPTABLE) [ ] any NO (NOT ACCEPTABLE)
If this SDM is NOT ACCEPTABLE, immediately comply with the appropriate Technical Specification Action Statement, notify the SFM and submit an Action Request.

REMARKS:
_____
_____

PERFORMED BY _____ DATE/TIME _____/_____

REVIEWED BY _____ DATE/TIME _____/_____
M

REVIEWED BY _____ DATE _____
PPE (Reactor Engineering)

DIABLO CANYON POWER PLANT
STP R-19
ATTACHMENT 8.4

1 AND 2

TITLE: Data Sheet 4, SHUTDOWN MARGIN Calculation in MODES 1 and with a Dropped Control Rod

UNIT _____ CYCLE _____ MODE _____ DATE _____ TIME _____

1. CURRENT CORE CONDITIONS (for time of SDM)
   a. Control bank position (bank/step) _____/____
   b. Boron concentration _____ ppm
   c. Power level _____% RTP
   d. Burnup (from PEP R-5) _____MWD/T
   e. Number of dropped rods _____
2. AVAILABLE ROD WORTH FOR SHUTDOWN
   Available rod worth for shutdown from Volume 9, Section IB at control bank position (Step 1.a.). Use Figure R19-1F-2 (Unit 1) or Figure R19-2F-2 (Unit 2) (-)_____ pcm
3. POWER DEFECT
   Total Power Defect from Volume 9, Section ID, Figure R17-1F-3 (Unit 1) or R17-2F-3 (Unit 2) at power level (Step 1.c.), boron concentration (Step 1.b.), and burnup (Step 1.d) (+)_____ pcm
4. MAXIMUM WORTH OF DROPPED ROD(S)
   a. Most reactive rod worth from Volume 9, Section ID, Table R19-1T-1 (Unit 1) or R19-2T-1 (Unit 2) (+)_____ pcm
   b. Total dropped rod worth (Step 4.a. x Step 1.e.) (+)_____ pcm
5. AVAILABLE SHUTDOWN WORTH
   Total net worth of withdrawn rod banks, power defect and dropped RCCA's (Step 2 + Step 3 + Step 4.b) (-)_____ PCM
6. SHUTDOWN MARGIN
   % ΔK/K Shutdown (Step 5 ÷ (-1000)) _____%ΔK/K
7. MINIMUM SHUTDOWN MARGIN DETERMINATION
   Is the SHUTDOWN MARGIN determined in Step 6 greater than or equal to +1.6% ΔK/K? YES [ ] NO [ ]

   If the answer is YES, the core has sufficient SHUTDOWN MARGIN. If the answer is NO, immediately comply with the appropriate Technical Specification Action Statement, notify the Shift Foreman, and submit an Action Request.

REMARKS: _____

PERFORMED BY _____ DATE/TIME _____/_____

REVIEWED BY _____ DATE/TIME _____/_____
(Shift Foreman)

REVIEWED BY _____ DATE _____
PPE (Reactor Engineering)

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

Job Performance Measure

Number: ADMNRC-06SRO

Title: VERIFY SHUTDOWN MARGIN CALCULATION

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: STP R-19, Shutdown Margin Determination
Table R19-1T-5, Rev 14
ITS 3.1.1, Shutdown Margin

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 15 minutes

Critical Steps: 8,9,10

Job Designation: SRO

KA Number: G2.1.25, Ability to Obtain and Interpret Station Reference Material

Rating: 3.1

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: Copy of completed STP R-19, Shutdown Margin Determination

Initial Conditions: Unit 1 tripped from 100% power 23 hours ago. Rod K6 did not insert into the core and is stuck at 220 steps. Current conditions are: T_{AVG} = 548°F, C_B = 1356, Core Burnup = 127 MWD/MTU.

Initiating Cue: The CO has completed a manual calculation of STP R-19, Shutdown Margin Determination, taking NO credit for Xe/Sm and without APEX, and is ready for your review.

Task Standard: Completed SDM Determination verification.

Start Time: _____

	Step		Expected Operator Actions
1.	Verifies Start Data Section	1.1	Notes Unit (1), Mode (3) and Date/Time
		1.2	Reviews Precautions and Limitations and initials
			Step SAT:_____ UNSAT:_____*
2.	Verifies which data sheet to use	2.1	Verifies data sheet 2 of STP R-19 must be used
		2.2	Verifies information concerning data sheet 2
			NOTE: May enter Remark noting this is a Xe/SM calculation.
			Step SAT:_____ UNSAT:_____*
3.	Verifies Section A of Data Sheet 2 completed correctly	3.1	Verifies correct input:
			Unit 1, Cycle 12, Mode 3, Today's Date and Time
			Step SAT:_____ UNSAT:_____*
4.	Verifies Section B completed correctly	4.1	Verifies input:
			T_{AVG} = 548°F, C_B = 1356, Core Burnup = 127 MWD/MTU, Time since Shutdown = 23 hours
			Step SAT:_____ UNSAT:_____*

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Step		Expected Operator Actions
5. Verifies Section C completed correctly	51	Determines Section C is N/A and verifies 0 entered in Step C.4 **Step SAT:_____ UNSAT:_____***
6. Verifies Section D completed correctly	6.1	Verifies: • Most reactive rod worth = 680 pcm • Stuck rods = 1 • Total stuck rod worth = 680 pcm • Worth of withdrawn rod is N/A **CUE: When asked physics testing data on stuck rod, feedback this will not be included in the calculation and to mark it N/A.**
	6.2	Verifies total stuck rod worth is 680 pcm **Step SAT:_____ UNSAT:_____***
7. Verifies Section E competed correctly	7.1	Verifies Section E does not apply and marked N/A **Step SAT:_____ UNSAT:_____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

	Step		Expected Operator Actions
8.	** Verifies Section F completed correctly	8.1	Verifies: • Minimum C_B to 548°F is 1211 ppm • Add 100 ppm to have 1311 ppm • Boron Worth for 1311 at 548°F = 10125 pcm • Boron worth multiplier = 1 • Total worth corrections = +680 pcm • *Net required boron worth = -9445 pcm* • *Required C_B per BOL table = 1216 ppm* **Step SAT:_____ UNSAT:_____***
9.	** Determine error in calculation	9.1	Determines Net required boron is –10805 +/_ 20 pcm, **NOT** –9445 pcm
		9.2	Determines Required C_B per BOL table = 1405 +/- 10 ppm **Step SAT:_____ UNSAT:_____***
10.	** Verifies Section G completed correctly	10.1	Verifies Actual C_B of 1356 ppm < Required C_B of 1405 +/- 10 ppm
		10.2	Determines ITS 3.1.1 requires boration initiated within 15 minutes to achieve > 1405 +/- 10 ppm **Step SAT:_____ UNSAT:_____***

Stop Time: _____

Total Time: _____

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 tripped from 100% power 23 hours ago. Rod K6 did not insert into the core and is stuck at 220 steps. Conditions at the time of trip were: T_{AVG} = 548°F, C_B = 1356, Core Burnup = 127 MWD/MTU.

Initiating Cue: The CO has completed a manual calculation of STP R-19, Shutdown Margin Determination, taking NO credit for Xe/Sm and without APEX, and is ready for your review.

Task Standard: Completed SDM Determination verification.

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

START DATA SECTION

UNIT ***1*** OPERATING MODE ***3*** DATE/TIME ***Today/Now***

PRECAUTIONS AND LIMITATIONS	**INITIALS**
Wherever a (+) or (-) sign is given on data sheets, the correct number may be entered with no other signs.	___ *JO* ___
For the purpose of SDM verification, the plant is considered to have been at equilibrium conditions if the power level did not vary more than ±5% RTP in the 48 hours before shutdown.	___ *JO* ___

PREREQUISITES

None

PERF

PROCEDURE

Determine the correct Data Sheet or STP to use:

for MODE	With	Use	Initial Which Selected
1	Normal conditions	STP I-1A	
1	Stuck Rod(s)	STP R-19 DATA SHEET 1	
1	a Dropped Rod	STP R-19 DATA SHEET 4	
2	Normal conditions	STP I-1A	
2	ECP Criticality	STP R-17	
2	Stuck Rod(s)	STP R-19 DATA SHEET 1	
2	Physics Testing in progress	STP R-6	
2	a Dropped Rod	STP R-19 DATA SHEET 4	
3	Normal conditions	STP R-19 DATA SHEET 2 or STP I-1B	
3	Stuck Rod(s)	STP R-19 DATA SHEET 2	
3	Shutdown Banks Out	STP R-19 DATA SHEET 3	
3	Rod Drop Testing	STP R-19 DATA SHEET 3	
3	Physics Testing in progress	STP R-19 DATA SHEET 2	
4	Normal conditions	STP R-19 DATA SHEET 2 or STP I-1B	
4	Stuck Rod(s)	STP R-19 DATA SHEET 2	
5	Normal conditions	STP R-19 DATA SHEET 2 or STP I-1B	
5	For Mode 6 Entry	STP I-1B	
5	Stuck Rods	STP R-19 DATA SHEET 2	
6	Normal conditions	STP I-1B	

If the method is Data Sheet 2: N/A [ ]

If the reactor was not at equilibrium conditions prior to shutdown, consult Reactor Engineering before continuing. It may be necessary to calculate Xenon and Samarium worths for Section C of the Data Sheet.

N/A [**X**] _____

PERF

****

CAUTION: If credit is taken for Xe/Sm, the SDM calculation must be repeated every four hours

****

For conservatism and ease of calculation, Xe/Sm may be ignored. This will increase the required boron concentration and therefore may not be desirable at EOL.

N/A [ ] ___ JO ___

If the "APEX" code is used to calculate xenon and samarium worths, assume "N-1" rods and no boron (see Reference 6.8 as needed).

N/A [*X*] _____

REVIEW AND ROUTING

SFM Review completed procedure. If Acceptance Criteria are not met, refer to the applicable LCO and initiate an Action Request.

AR # _____

REMARKS: ***1- 12.2.1 This R-19 is for Xe/Sm free***

Reviewed By: _____ Date/Time _____/_____
Shift Foreman

PPE (Reactor Engineering) review test for completeness and acceptability.

REMARKS: _____

Reviewed By: _____ Date _____
PPE (Reactor Engineering)

DIABLO CANYON POWER PLANT
STP R-19
ATTACHMENT 8.1

1 AND 2

TITLE: Data Sheet 1, SHUTDOWN MARGIN Calculation in MODES 1 and 2 with Stuck Control Rods*

UNIT _____ CYCLE _____ MODE _____ DATE _____ TIME _____

1. CURRENT CORE CONDITIONS (for time of SDM)
   a. Control bank position (bank/step) _____/____
   b. Boron concentration _____ ppm
   c. Power level _____% RTP
   d. Burnup (from PEP R-5) _____MWD/T
   e. Number of stuck rods** _____
2. AVAILABLE ROD WORTH FOR SHUTDOWN
   Available rod worth for shutdown from Volume 9, Section IB at control bank position (Step 1.a.) and burnup (Step 1.d.). Use Figure R19-1F-2 (Unit 1) or Figure R19-2F-2 (Unit 2) (-)_____ pcm
3. POWER DEFECT
   Total Power Defect from Volume 9, Section ID, Figure R17-1F-3 (Unit 1) or R17-2F-3 (Unit 2) at power level (Step 1.c.), boron concentration (Step 1.b.), and burnup (Step 1.d) (+)_____ pcm
4. WORTH OF STUCK ROD(S)**
   a. Most reactive rod worth from Volume 9, Section ID, Table R19-1T-1 (Unit 1) or R19-2T-1 (Unit 2) (+)_____ pcm
   b. Total stuck rod worth (Step 4.a. x Step 1.e.) (+)_____ pcm
5. AVAILABLE SHUTDOWN WORTH
   Total net worth of withdrawn rod banks, power defect and stuck RCCA's (Step 2 + Step 3 + Step 4.b) (-)_____ PCM
6. SHUTDOWN MARGIN
   % ΔK/K Shutdown (Step 5 ÷ (-1000)) _____%ΔK/K
7. MINIMUM SHUTDOWN MARGIN DETERMINATION
   Is the SHUTDOWN MARGIN determined in Step 6 greater than or equal to +1.6% ΔK/K? YES [ ] NO [ ]

   If the answer is YES, the core has sufficient SHUTDOWN MARGIN. If the answer is NO, immediately follow the appropriate Tech Spec Action Statement, notify the Shift Foreman, and submit an Action Request.

* **NOTE:** If no immovable or untrippable control rods, use STP I-1A to verify SHUTDOWN MARGIN

** **NOTE:** Stuck is defined as untrippable or immovable due to excessive friction or mechanical interference.

REMARKS: _____

PERFORMED BY _____ DATE/TIME _____/_____

REVIEWED BY _____ DATE/TIME _____/_____
(Shift Foreman)

REVIEWED BY _____ DATE _____
PPE (Reactor Engineering)

DIABLO CANYON POWER PLANT
STP R-19
ATTACHMENT 8.2

1 AND 2

TITLE: Data Sheet 2, SHUTDOWN MARGIN in MODES 3, 4, and 5, All Rods In or Stuck Rods

A. UNIT ***1*** CYCLE ***12*** MODE ***3*** DATE ***Today*** TIME ***Now***

WARNING : 1. With stuck* rod(s), perform this calculation within ONE hour and every 24 hours thereafter.
2. If credit is taken for Xenon (Step C.2), repeat this calculation at least every FOUR hours.

B. CURRENT CORE CONDITIONS
(At the time of this SDM Calculation)
1. RCS Temperature (TAVG) __ ***548*** ___ ºF
2. RCS Boron Concentration __***1356***___ PPM
3. Core Avg Burnup (PEP R-5) MWD
___***127***___ MTU
4. Time Since Plant Shutdown [ ] N/A
(N/A startup after refueling) ____***23***___ HRS

C. XENON AND SAMARIUM WORTH [***X***] N/A
__***10125***___ PCM
(If no credit is taken for Xe/Sm, check N/A, enter Ø pcm in Step C.4, and go to Step D.)

	YES	NO	N/A
1. Power history determined and attached	[ ]	[ ]	[ ]

__***10125***___ PCM
2. If at equilibrium, estimated Xenon worth from R17-1T-2 or R17-2T-2 (–) _____
Circle Table per B.3: BOL MOL EOL
__***9445***____ PCM
3. If at equilibrium, Samarium worth from R17-1T-3 or R17-2T-3 (–) _____
B.1 from
4. Total Xe & Sm worth (C.2 + C.3) or "APEX" output or zero (–) ____***0***_____

D. WITHDRAWN ROD/BANK WORTH (N/A if APEX) [ ] N/A
(If any rods not FULLY inserted, do not enter Ø pcm in Step D.5.)
1. Most reactive rod worth from R19-1T-1 or R19-2T-1 (+) __***680***_____ PCM
2. Number of stuck rods* ____***1***_____
3. Total stuck rod worth (D.1 x D.2) (+) __***680***_____ PCM
4. Worth of withdrawn rod/bank during physics tests N/A [ ](+) _____***0***_____ PCM
5. Total stuck and withdrawn rod worth (D.3 + D.4) (not zero if any rods out) (+) ___***680***____ PCM
_____ PCM

E. SDM REQUIREMENT CORRECTION [***X***] N/A
1. If this SDM calculation is for MODE 5 (B.1 ≤ 200ºF), enter -600 pcm, or check N/A ( ) _____ PCM
_____ %

F. REQUIRED BORON CONCENTRATION
1. Minimum required boron concentration for Temp B.1 and burnup B.3 from R19-1T-2 or R19-2T-2 __***1211***____ PPM
2. Add 100 PPM to concentration F.1 __***1311***____ PPM
NOTE: If Steps C, D & E = N/A, skip to F.8 and enter concentration F.2
3. Boron worth for concentration F.2 and Temp B.1 from R19-1T-5 or R19-2T-5 (–)
Circle Table per B.3: BOL MOL EOL
4. Boron worth multiplier for worth C.4 from R17-1F-1 or R17-2F-1 ___***1***_____
(If Step C.4 = Ø pcm, enter 1)
5. Boron worth corrected for Xe/Sm (F.3 x F.4) (–)
6. Total worth corrections (C.4 + D.5 + E.1) (**+**) __***680***_____ PCM
PCM
7. Net required boron worth (F.5 - F.6) (**-**)
If positive, enter Ø pcm
8. Required boron concentration
PCM for worth F.7, and Temp
R19-1T-5 or R19-2T-5 __***1216***____ PPM
Select Table per B.3: BOL MOL EOL
PCM

G. ACCEPTANCE CRITERIA
1. Is the actual boron
or equal to the required concentration F.8?
[***X***] YES (ACCEPTABLE) [ ] NO (NOT
If this SDM is NOT ACCEPTABLE immediately follow the appropriate Tech Spec Action Statement, notify the SFM, and submit an Action Request.

H. OPTIONAL EXPLICIT SDM CALCULATION
1. Boron worth for concentration B.2 and Temp. B.1 from R19-1T-5 or R19-2T-5 (–)
Select Table per B.3: BOL
2. Total Present Worth (H.1 + C.4 + D.5 - 1600 pcm) (–)
3. Actual SHUTDOWN MARGIN (H.2 - F.3)/(-1000 x F.4) ( )

* Stuck is defined as untrippable or immovable due to excessive friction or mechanical interference.

REMARKS _____

STP R-19 (UNITS 1 AND 2)
ATTACHMENT 8.2

TITLE: Data Sheet 2, SHUTDOWN MARGIN in MODES 3, 4, and 5, All Rods In or Stuck Rods

PERFORMED BY: *Joe Operator* DATE *Today* TIME *Now*

REVIEWED BY _____ DATE _____ TIME _____
Shift Foreman

REVIEWED BY: _____ DATE _____ TIME _____
PPE (Reactor Engineering)

DIABLO CANYON POWER PLANT
STP R-19
ATTACHMENT 8.3

1 AND 2

TITLE: Data Sheet 3, SHUTDOWN MARGIN Verification, MODE 3 to Pull or with S/D Banks Out or Rod Drop Testing

UNIT _____ CYCLE _____ DATE _____ TIME _____

This SHUTDOWN MARGIN verification is for MODE 3 to pull or with Shutdown Banks out or to perform rod drop testing.

WARNING: If Xenon is present, this calculation should be repeated at least every FOUR hours.

ACTUAL CORE CONDITIONS (at the time of SDM calculation)

a. Core average cycle burnup (PEP R-5) _____ MWD/T

b. Moderator average temperature (Tavg) _____ °F

c. RCS boron concentration _____ ppm

MINIMUM REQUIRED BORON CONCENTRATION

a. Obtain the MINIMUM REQUIRED BORON CONCENTRATION for MODE 6 listed on Table R19-1(2)T-1 or perform an ECP calculation per STP R-17. Assume rods are at or above the zero power rod insertion limit for R-17.

b. Required boron concentration determined in Step 2.a. above. Attach R-17 calculation if performed. _____ ppm

	YES	NO
c. Is the actual boron concentration in the core (Step 1.c) greater than or equal to the required boron concentration (Step 2.b)?	[ ]	[ ]
d. Is the moderator average temperature (Step 1.b) equal to or greater than 541°F?		

SHUTDOWN MARGIN ACCEPTABILITY

Answers to 2.c and 2.d: [ ] both YES (ACCEPTABLE)

[ ] any NO (NOT ACCEPTABLE)

If this SDM is NOT ACCEPTABLE, immediately comply with the appropriate Technical Specification Action Statement, notify the SFM and submit an Action Request.

STP R-19 (UNITS 1 AND 2)
ATTACHMENT 8.3

TITLE: Data Sheet 3, SHUTDOWN MARGIN Verification, MODE 3 to Pull or with S/D Banks Out or Rod Drop Testing

REMARKS:
_____
_____

PERFORMED BY _____ DATE/TIME _____/_____

REVIEWED BY _____ DATE/TIME _____/_____

REVIEWED BY _____ SFM DATE _____

PPE (Reactor Engineering)

DIABLO CANYON POWER PLANT
STP R-19
ATTACHMENT 8.4

1 AND 2

TITLE: Data Sheet 4, SHUTDOWN MARGIN Calculation in MODES 1 and with a Dropped Control Rod

UNIT _____ CYCLE _____ MODE _____ DATE _____ TIME _____

1. CURRENT CORE CONDITIONS (for time of SDM)
   a. Control bank position (bank/step) _____/____
   b. Boron concentration _____ ppm
   c. Power level _____% RTP
   d. Burnup (from PEP R-5) _____MWD/T
   e. Number of dropped rods _____
2. AVAILABLE ROD WORTH FOR SHUTDOWN
   Available rod worth for shutdown from Volume 9, Section IB at control bank position (Step 1.a.). Use Figure R19-1F-2 (Unit 1) or Figure R19-2F-2 (Unit 2) (-)_____ pcm
3. POWER DEFECT
   Total Power Defect from Volume 9, Section ID, Figure R17-1F-3 (Unit 1) or R17-2F-3 (Unit 2) at power level (Step 1.c.), boron concentration (Step 1.b.), and burnup (Step 1.d) (+)_____ pcm
4. MAXIMUM WORTH OF DROPPED ROD(S)
   a. Most reactive rod worth from Volume 9, Section ID, Table R19-1T-1 (Unit 1) or R19-2T-1 (Unit 2) (+)_____ pcm
   b. Total dropped rod worth (Step 4.a. x Step 1.e.) (+)_____ pcm
5. AVAILABLE SHUTDOWN WORTH
   Total net worth of withdrawn rod banks, power defect and dropped RCCA's (Step 2 + Step 3 + Step 4.b) (-)_____ PCM
6. SHUTDOWN MARGIN
   % ΔK/K Shutdown (Step 5 ÷ (-1000)) _____%ΔK/K
7. MINIMUM SHUTDOWN MARGIN DETERMINATION
   Is the SHUTDOWN MARGIN determined in Step 6 greater than or equal to +1.6% ΔK/K? YES [ ] NO [ ]

   If the answer is YES, the core has sufficient SHUTDOWN MARGIN. If the answer is NO, immediately comply with the appropriate Technical Specification Action Statement, notify the Shift Foreman, and submit an Action Request.

REMARKS: _____

PERFORMED BY _____ DATE/TIME _____/_____

REVIEWED BY _____ DATE/TIME _____/_____
(Shift Foreman)

REVIEWED BY _____ DATE _____
PPE (Reactor Engineering)

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: ADMNRC-7RO

Title: DETERMINATION OF SPENT FUEL POOL HEAT LOAD/REMOVAL PARAMETERS

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: OP B-8DS1, Core Loading, Attachment 9.3 and 9.4, Rev. 28

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 10 Minutes

Critical Steps: 3, 4

Job Designation: RO/SRO

KA Number: G2.1.23, Ability to Explain and Apply All System Limits and Precautions

Rating: 3.4/3.8

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. The examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 is currently in Mode 6 with fuel offload in progress during 1R11.

Current Plant parameters are as follows:

- Mode 3 was entered 6 days ago at 1500
- Current time is 1500
- 165 fuel assemblies have been offloaded to the spent fuel pool
- CCW flow rate on FI-198 is 3200 gpm
- CCW Heat exchanger outlet temperatures are : TI-182 - 72°F
  TI-183 - 75°F
- Spent Fuel Pool Pump 1 2 D/P is 38 psid
- Spent Fuel Pool Temperature is 127°F

Initiating Cue: Shift Foreman directs you to complete Attachment 9.3 and 9.4 of OP B-8DS1, Core Unloading, for his review and to inform him of any limits exceeded.

Task Standard: Attachment 9.3 and 9.4 of OP B-8DS1, “Core Unloading” completed for Shift Foreman review and notified of results.

Start Time: _____

Step	Expected Operator Actions
1. Operator obtains the correct procedure.	1.1 Operator obtains OP B-8DS1, Attachments 9.3 and 9.4. ********** **Cue: Provide candidate with exam copy of Attachments 9.3 and 9.4.** ********** **Step was: Sat: _____ Unsat _____***
2. Determine Mode 3 Entry, date & time.	2.1 Operator determines Mode 3 entry date and time and enters on data sheet. **Note: Operator should use 6 days ago from current time and date.** **Step was: Sat: _____ Unsat _____***
3. **Determines current offload status.	3.1 Determines that 144 hours have elapsed from start of core offload and enters on data sheet. 3.2 Determines that number of fuel assemblies offloaded is 165 and enters data. 3.3 Determines that elapsed time and number of assemblies removed is within the acceptable area of chart.. **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

4. **Determines Spent Fuel Pool Cooling System Status.	4.1 Determines CCW flow rate from FI-198 is 3200 gpm and enters on Attach. 4.2 Determines that CCW flowrate is acceptable. 4.3 Determines that the CCW Heat Exchanger Outlet Temperatures are 72°F on TI-182 and 75°F on TI-183 and enters on Attach. 4.4 Determines that CCW Heat Exchanger Outlet Temperature is acceptable. 4.5 Determines that SFP Pump 1-2 D/P is 38 psid and enters on Attach. 4.6 Determines that SFP Pump 1-2 D/P is acceptable. 4.7 Determines that Spent Fuel Pool Temperature is 127°F. 4.8 Determines that the Spent Fuel Pool temperature is unacceptable. **Step was: Sat: _____ Unsat _____***
5. Notifies Shift Foreman	5.1 Notifies Shift Foreman that Spent Pool Heat Load/Removal Parameters are not met due to high Spent Fuel Pool Temperature. **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 is currently in Mode 6 with fuel offload in progress during 1R11.

Current Plant parameters are as follows:

- Mode 3 was entered 6 days ago at 1500
- Current time is 1500
- 165 fuel assemblies have been offloaded to the spent fuel pool
- CCW flow rate on FI-198 is 3200 gpm
- CCW Heat exchanger outlet temperatures are : TI-182 - 72°F
  TI-183 - 75°F
- Spent Fuel Pool Pump 1-2 D/P is 38 psid
- Spent Fuel Pool Temperature is 127°F

Initiating Cue: Shift Foreman directs you to determine if Spent Fuel Pool Heat Load/Removal parameters are met by performing Attachment 9.3 and 9.4 of OP B-8DS1, "Core Unloading".

Task Standard: Attachment 9.3 and 9.4 of OP B-8DS1, "Core Unloading" completed and any Shift Foreman notified of results.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: ADMNRC-7SRO

Title: VERIFICATION OF DETERMINATION OF SPENT FUEL POOL HEAT LOAD/REMOVAL PARAMETERS

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: OP B-8DS1, Core Loading, Attachment 9.3 and 9.4, Rev. 28

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 10 Minutes

Critical Steps: 3, 5

Job Designation: SRO

KA Number: G2.1.23, Ability to Explain and Apply All System Limits and Precautions

Rating: 3.8

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. The examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 is currently in Mode 6 with fuel offload in progress during 1R11.

Current Plant parameters are as follows:

- Mode 3 was entered 6 days ago at 1500
- Current time is 1500
- 188 fuel assemblies have been offloaded to the spent fuel pool
- CCW flow rate on FI-198 is 3200 gpm
- CCW Heat exchanger outlet temperatures are : TI-182 - 72°F
  TI-183 - 75°F
- Spent Fuel Pool Pump 1-2 D/P is 38 psid
- Spent Fuel Pool Temperature is 124°F
- Fuel assembly being moved from core location to cavity upender.

Unit 1 Control Operator has just completed Attachments 9.3 and 9.4 of OP B-8DS1, "Core Unloading" verification of Spent Fuel Pool Heat Load/Removal parameters.

Initiating Cue: Perform a verification of the completed attachments 9.3 and 9.4 and determine if any corrective action(s) are required based on your review.

Task Standard: Attachments 9.3 and 9.4 of OP B-8DS1, "Core Unloading" verified and required action(s) determined if required.

Start Time: _____

Step	Expected Operator Actions
1. Operator obtains the correct procedure.	1.1 Operator reviews OP B-8DS1, Attachment 9.3 3and 9.4. ********** **Cue: Provide candidate with exam copy of completed Attachments 9.3 and 9.4.** ********** **Step was: Sat: _____ Unsat _____***
2. Verifies Mode 3 Entry, date & time.	2.1 Operator verifies Mode 3 entry date and time and checks on data sheet. **Note: Should use 6 days ago from current time and date.** **Step was: Sat: _____ Unsat _____***
3. **Verifies current offload status.	3.1 Verifies that 144 hours have elapsed from start of core offload and checks data sheet. 3.2 Verifies that number of fuel assemblies offloaded is 188 and checks data sheet. 3.3 Verifies that elapsed time and number of assemblies removed is within the UNACCEPTABLE area of chart and was marked YES incorrectly. **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

4. Verifies Spent Fuel Pool Cooling System Status.	4.1 Verifies CCW flow rate from FI-198 is 3200 gpm and checks data sheet. 4.2 Verifies that CCW flowrate is acceptable. 4.3 Verifies that the CCW Heat Exchanger Outlet Temperatures are 72°F on TI-182 and 75°F on TI-183 and checks data sheet. 4.4 Verifies that CCW Heat Exchanger Outlet Temperature is acceptable. 4.5 Verifies that SFP Pump 1-2 D/P is 38 psid and checks data sheet. 4.6 Verifies that SFP Pump 1-2 D/P is acceptable. 4.7 Verifies that Spent Fuel Pool Temperature is 124°F. 4.8 Determines that the Spent Fuel Pool temperature is acceptable. **Step was: Sat: _____ Unsat _____***
5. **Determines effect of findings on current Core Unload.	5.1 Determines that core offload has exceeded SFP capacity fro Attachment 9.3. 5.2 Determines Fuel Handling SRO should be notified to halt core offload after completion of current fuel move. **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 is currently in Mode 6 with fuel offload in progress during 1R11.

Current Plant parameters are as follows:

- Mode 3 was entered 6 days ago at 1500
- Current time is 1500
- 188 fuel assemblies have been offloaded to the spent fuel pool
- CCW flow rate on FI-197 is 3200 gpm
- CCW Heat exchanger outlet temperatures are : TI-181 - 72°F
  TI-182 - 75°F
- Spent Fuel Pool Pump 1-2 D/P is 38 psid
- Spent Fuel Pool Temperature is 124°F
- Fuel assembly being moved from core location to cavity upender.

Unit 1 Control Operator has just completed Attachments 9.3 and 9.4 of OP B-8DS1, "Core Unloading" verification of Spent Fuel Pool Heat Load/Removal parameters.

Initiating Cue: Perform a verification of the completed attachments 9.3 and 9.4 and determine if any corrective action(s) are required based on your review.

Task Standard: Attachments 9.3 and 9.4 of OP B-8DS1, "Core Unloading" verified and required action(s) determined if required.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: ADMNRC-08RO

Title: RE-VERIFY ACTIVE MASTER CLEARANCE – Backwash Slurry Pump – ON HOLD

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments: Use Training Clearance No. 00825. This clearance is for the Mechanical Maintenance Piping and Pump Loop Skid in the Maintenance Training Building

Use Cues if tags are not hung.

References: OP2.ID1, Clearances, Rev. 11B

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 10 Minutes

Critical Steps: 2, 3

Job Designation: RO

Task Number: G2.2.13

Rating: 3.6

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

REV. 0

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. The examinee may be given the procedure and told the step with which to begin.

Required Materials: Training Clearance No. 00825

If required to print the clearance:

- Open PG&E Network Terminal
- Applid: "pimsf" and press enter
- User ID: u00o ("u"nion, ,zero, zero, "o"perator)
- Password: USER

Initial Conditions: Backwash Slurry Pump 0-2 is isolated for maintenance and controlled by Clearance 00825.

Initiating Cue: SFM directs you to perform the 90 day re-verification of Backwash Slurry Pump 0-2 clearance number 00825.

Task Standard: Clearance 00825 re-verification completed.

Start Time: _____

	Step		Expected Operator Action
1.	Operator obtains correct procedure	1.1	Operator obtains OP2.ID1, Clearances, Step 5.5.3
		NOTE:	**This Step not required, if referenced provide candidate with copy.**
			Step was: Sat: _____ Unsat _____*
2.	**Checks plant configuration established by clearance still exists.	2.1	Operator verifies Backwash Slurry Pump 0-2 Control Switch tag intact and legible.
		CUE:	**The CBC tag is intact and legible.**
		2.2	Operator verifies breaker 52-MO-1001B is OPEN and tag intact and legible.
		CUE:	**Breaker 52-MO-1001B is OPEN and tag intact and legible.**
		2.3	Operator verifies BSC-0-1230, Backwash Slurry Pump 0-2 Discharge Valve is CLOSED and tag intact and legible.
		CUE:	**BSC-0-1230 is CLOSED and tag intact and legible.**
		2.4	Operator verifies BSC-0-2271, Backwash Slurry Tank 0-1 Outlet Valve is CLOSED and tag intact and legible.
		CUE:	**BSC-0-2271 is CLOSED and tag intact and legible.**

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Step		Expected Operator Action
	2.5	Operator verifies BSC-0-2270, Backwash Slurry Suction Cross-Tie Valve is CLOSED and tag intact and legible.
		CUE: BSC-0-2270 is CLOSED and tag intact and legible.
	2.6	Operator verifies BSC-0-2270, Backwash Slurry Suction Cross-Tie Valve is CLOSED and tag intact and legible. **Step was: Sat: _____ Unsat _____***
3. ** Verifies BSC-0-2297 position and tag	3.1	Operator verifies BSC-0-2297, Backwash Slurry Suction Header Drain Valve is OPEN and tag intact and legible.
		CUE: BSC-0-2297 is CLOSED and tag is missing.
	3.2	Operator contacts SFM immediately **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Backwash Slurry Pump 0-2 is isolated for maintenance and controlled by Clearance 00825.

Initiating Cue: SFM directs you to perform the 90 day re-verification of Backwash Slurry Pump 0-2 clearance number 00825.

Task Standard: Clearance 00825 re-verification completed.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: ADMNRC-9SRO

Title: PERFORM RISK ASSESSMENT FOR OOS COMPONETS

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments: Requires computer with access to ORAM.EXE program (J:ORAM/ORAM.EXE)

References: AD7.DC6, On-line Maintenance Risk Assessment

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 10 Minutes

Critical Steps: 2, 3, 4, 5

Job Designation: SRO

Task Number: G2.2.17

Rating: 3.5

AUTHOR: JACK BLACKWELL DATE: 06/29/2002

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. The examinee may be given the procedure and told the step with which to begin.

Required Materials: Computer with access to ORAM.EXE program (J:ORAM/ORAM.EXE)

Initial Conditions: Unit 1 is at 100% power. RHR Pp 1-1 is currently 2 hours into an 8 hour maintenance activity (Lube Oil change out) and is the only out of service component on Unit 1.

Initiating Cue: STA reports that following a review of the surveillance test for PORV PCV-456 that the valve may have failed to meet its stroke time. Using the On-line Risk assessment computer program (ORAM.EXE) and AD7.DC6, "On-line Maintenance Risk Assessment," perform a new Risk Assessment based on the PORV being inoperable. Additionally determine if any notifications are required based on the outcome of the risk assessment.

Task Standard: Risk assessment performed using the On-line Risk Assessment computer program (ORAM.EXE) and any required notifications identified.

Start Time: _____

Step	Expected Operator Actions
1. Operator references correct procedure.	1.1 Operator obtains and reviews AD7.DC6. ********** **Cue: Provide candidate with exam copy of AD7.DC6** ********** **Step was: Sat: _____ Unsat _____***
2. **Operator locates and starts ORAM program.	2.1 Operator locates ICON for ORAM program and starts program. **Step was: Sat: _____ Unsat _____***
3. **Operator selects Out of Service components.	3.1 Operator selects RHR Pp 1-1. 3.1.1 Selects Add/New. 3.1.2 Changes time to reflect current 8 hour outage. 3.1.3 Selects Unavailable and adds reason 3.1.4 Selects OK/OK. **NOTE: Operator may use Right Mouse Button to select out of service.** 3.2 Operator selects PORV PCV-456 3.2.1 Selects Add/New. 3.2.2 May or may not change time. (24 hours is acceptable) 3.2.3 Selects Unavailable and adds reason of STP Failure. 3.2.4 Selects OK/OK **NOTE: Operator may use Right Mouse Button to select out of service.** **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

4. **Determines TLS OOS combination results in an ORANGE terminus.	4.1 Determines SFAT is Yellow and 10 4.2 Determines Overall color is Orange **Step was: Sat: _____ Unsat _____***
5. **Determines Required Notifications	5.1 Determines that Operations Manager or higher notification is required. **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions:	Unit 1 is at 100% power. RHR Pp 1-1 is currently 2 hours into an 8 hour maintenance activity (Lube Oil change out) and is the only out of service component on Unit 1.
Initiating Cue:	STA reports that following a review of the surveillance test for PORV PCV-456, that the valve may have failed to meet it's stroke time. Using the On-line Risk assessment computer program (ORAM.EXE) and AD7.DC6, "On-line Maintenance Risk Assessment," perform a new Risk Assessment based on the PORV being inoperable. Additionally determine if any notifications are required based on the outcome of the risk assessment.
Task Standard:	Risk assessment performed using the On-line Risk Assessment computer program (ORAM.EXE) and any required notifications identified.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: ADMNRC-10

Title: ENTRY INTO A LOCKED HIGH RADIATION AREA

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments: The Access Senior should be briefed ahead of time and informed that actual entry into the area will not be required and that the student will be stopped at the door to the Letdown heat exchanger rooms.

Perform while in RCA

References: RCP D-220, Control of Access To High, High-High and Very High Radiation Areas, Rev. 20 (do not give this to the student).

OP AP-9, Loss of Instrument Air, Rev. 19

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 15 minutes

Critical Steps: 1, 2, 3

Job Designation: RO/SRO

K/A Number: G2.3.1(2.6/3.0)

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

REV. 0

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. The examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 2 Reactor Tripped due to a loss of Instrument Air. SFM is directing actions from Appendix B of OP AP-9, Loss of Instrument Air.

Initiating Cue: The Unit 2 SFM directs you to enter the Letdown Heat Exchanger room in preparation for locally positioning PCV-135 outlet isolation valve CVCS-2- 8408B to 50% per Step 2c, Check Letdown in service RNO of OP AP-9.

Task Standard: Entry into Letdown heat exchanger room completed.

Start Time: _____

Step	Expected Operator Actions
1. **Enters the RCA	1.1 Operator checks Area maps at Access Control to determine radiation levels at the Letdown heat exchanger room. 1.2 Obtains PED 1.3 Logs into RCA on Operations RWP. **Note: Only steps 1.2 and 1.3 are necessary to complete the critical step.** **Step was: Sat: _____ Unsat _____***
2. **Determines entry into a locked high radiation area is required.	2.1 Operator determines he needs to enter a locked high radiation area by either performing step 1.1 (above) or by observing the signs posted at the Letdown heat exchanger room. 2.2 Informs Access Senior of his need to enter a locked high radiation area. **Step was: Sat: _____ Unsat _____***
3. **Tailboards entry into the Letdown heat exchanger room.	3.1 Operator ensures he meets the radiation monitoring requirements for entry into the Letdown heat exchanger room as directed by the Access Senior. 3.2 Obtains pink "HRA" ID badge. (NOT part of critical step.) 3.3 Obtains key to the Letdown heat exchanger rooms.

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Note: The Access Senior may decide to send a RP tech with the operator to unlock the door and perform radiation monitoring functions.

Step was: Sat: _____ Unsat _____*

4. Enters Letdown heat exchanger room.

4.1 Operator locates the door to the Letdown heat exchanger room.

4.2 Prepares to unlock the door.

****

Cue: The JPM is complete, entry into the Letdown heat exchanger rooms is NOT required.

****

Step was: Sat: _____ Unsat _____*

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions:	Unit 2 Reactor Tripped due to a loss of Instrument Air. SFM is directing actions from Appendix B of OP AP-9, Loss of Instrument Air.
Initiating Cue:	The Unit 2 SFM directs you to enter the Letdown Heat Exchanger room in preparation for locally positioning PCV-135 outlet isolation valve CVCS-2- 8408B to 50% per Step 2c, Check Letdown in service RNO of OP AP-9.
Task Standard:	Entry into Letdown heat exchanger room completed.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: ADMNRC-11SRO

Title: PERFORM AN OFF-SITE DOSE ASSESSMENT - FHB ACCIDENT

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

This JPM does NOT need to be performed in the simulator. It can be performed in the Control Room or in a classroom with the Cues.

References: EP R-2, Release of Airborne Radioactive Materials Initial Assessment, Rev. 19

EP G-1, Accident Classification and Emergency Plan Activation, Rev. 31

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 15 minutes

Critical Steps: 2, 3, 5

Job Designation: SRO

KA Number: G2.4.41, Knowledge of EAL thresholds and classification

Rating: 4.1

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 is in refueling.

Initiating Cue: The Control Room was informed that a spent fuel assembly was dropped in the Unit 1 Fuel Handling Building and some gas has escaped from the fuel assembly. The Shift Manager directs you to perform a dose assessment and recommend an emergency classification based on your dose assessment. The PPC program for R-2 calculations is unavailable.

Task Standard: Dose assessed and a recommendation made for the emergency classification.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References EP R-2. **Step was: Sat: _____ Unsat _____***
2. ** Determine the total effluent release rate.	2.1 References Attachment 10.1, page 1, of EP R-2. 2.2 Fills out section 1. 2.3 Determines plant vent flow rate from FR-12 chart recorder. ********** **Cue: FR-12 indicates 18 x 10^4 cfm.** ********** 2.4 Determines RE-14 or 14R reading from the radiation monitors. ********** **Cue: RE-14/14R indicate 0.84 E-5.** ********** 2.5 Determines noble gas release rate to be 7.14 E-4 ci/sec. 2.6 Determines total effluent conversion factor to be 1.11 (GAP). 2.7 Calculates total effluent release rate of 7.92 E-4 ci/sec. **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

3. ** Perform dose calculations.	3.1 References Attachment 10.2 of EP R-2. 3.2 Obtains met data from PPC ********** **Cue: Site boundary X/Q is 0.547 E-5 sec/m^3.** ********** 3.3 Determines DCF to be 6.5 E+7 (GAP). 3.4 Calculates TEDE rate of 0.013 mR/hr and a total dose of 0.039 mR. 3.5 Calculates thyroid CDE rate of 0.28 mR/hr and a total dose of 0.84 mR. **Step was: Sat: _____ Unsat _____***
4. Obtain correct procedure.	4.1 References EP G-1. **Step was: Sat: _____ Unsat _____***
5. ** Recommend event classification.	5.1 Recommends event classification of UNUSUAL EVENT (based on CDE rate greater than 0.17 mR/hr per G-1, UE #4). **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 is in refueling.

Initiating Cue: The Control Room was informed that a spent fuel assembly was dropped in the Unit 1 Fuel Handling Building and some gas has escaped from the fuel assembly. The Shift Manager directs you to perform a dose assessment and recommend an emergency classification based on your dose assessment. The PPC program for R-2 calculations is unavailable.

Task Standard: Dose assessed and a recommendation made for the emergency classification.

- ❑ The simulator is not needed for the performance of this JPM.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: ADMNRC-12SRO

Title: VERIFY AFD IS WITHIN TECH SPEC LIMITS

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: STP I-1C, Routine Weekly Checks, Attachment 11.1, Rev. 72

Volume 9B, Curves and Miscellaneous Data, Figure R23-1F-1, 1/14/2000, Rev. 159

Technical Specifications, DCPP Units 1 & 2

COLR for DCPP Unit 1, Cycle 12, Rev. 1

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 10 Minutes

Critical Steps: 2, 4, 5, 6, 7, 8, 9

Job Designation: SRO

Task Number: G2.1.33

Rating: 4.0

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

REV. 0

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. The examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 rapidly ramped down to due to a leak on the No. 2 Heater Drain Tank pump. Reactor power is currently stabilized at approximately 75%.

Current Axial Flux Difference(AFD) readings are as follows:

NI-41C -21.0%

NI-42C -23.0%

NI-43C -23.0%

NI-44C -21.0%

PK03-25 P250 RX ALM AXIAL FLUX/ROD POS input 1251 activated

Indicated Reactor Power based on U1169A05 75.2%

U4300A05 is not available.

PPC MAX is 100.2%

Initiating Cue: Unit 1 BOPCO has just completed STP I-1C, Routine Weekly Checks, Attachment 11.1, Step 1.

BOPCO has determined that the AFD for two (2) excore channels are not within the AFD limits.

Review the completed STP Data sheet and determine if his assessment is correct and implement any actions needed based on your review.

Task Standard: STP I-1C, Routine Weekly Checks, Attachment 11.1, Step 1. reviewed for completeness and any actions implemented based on your review.

Start Time: _____

Step	Expected Operator Actions
1. Operator obtains correct procedure.	1.1 Operator obtains STP I-1C, Attachment 11.1. ********** **Cue: Provide candidate with exam copy of STP-I-1C, Attachment 11.1.** ********** **Step was: Sat: _____ Unsat _____***
2. **Verifies present Reactor Power.	2.1 References Note 1 for determination of reactor power. 2.2 Uses U1169A05 value (75.2)/ PPC Max (100.2) x 100. 2.3 Verifies RTP% to be 75% **Step was: Sat: _____ Unsat _____***
3. Operator obtains correct procedure.	3.1 Operator obtains Figure R23-1F-1 for Unit 1 from Volume 9. ********** **Cue: Provide candidate with exam copy of Figure R23-1F-1.** ********** **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

4. **Verifies Upper AFD Limit.	4.1 References R23-1F-1 4.2 Determines Upper AFD Limit to be +17.5%. 4.3 Verifies +17.5% recorded for Upper AFD Limit. **Step was: Sat: _____ Unsat _____***
5. **Verifies Lower AFD Limit.	5.1 References R23-1F-1 5.2 Determines Lower AFD Limit to be -22%. 5.3 Verifies -22% recorded for Lower AFD Limit. **Step was: Sat: _____ Unsat _____***
6. **Verifies indicated AFD values	6.1 Verifies indicated AFD values recorded for each NI. **Step was: Sat: _____ Unsat _____***
7. **Verifies AFD is Within limits.	7.1 Verifies that AFD is within limits for NIs 41C and 44C and boxes marked. 7.2 Verifies that AFD is outside the limits for NIs 42C and 43C and boxes marked. **Step was: Sat: _____ Unsat _____***
8. **Verifies that 2 excore channels exceed AFD Limit.	8.1 Verifies BOPCO notes that AFD limit is currently being exceeded. **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

9. **Determines AFD exceeds Tech Spec Limits.	9.1 Refers to Tech Spec 3.2.1. 9.2 Refers to Unit 1 COLR 1-10 **Note: Figure R23-1F-1 provides same information as COLR 1-10 and may be used.** 9.3 Determines AFD is outside limits specified in the COLR. 9.4 Determines action to reduce thermal power to less than 50% within 30 minutes. **Step was: Sat: _____ Unsat _____*** **Stop Time: _____** **Total Time: _____** (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 rapidly ramped down to due to a leak on the No. 2 Heater Drain Tank pump. Reactor power is currently stabilized at approximately 75%.

Current Axial Flux Difference(AFD) readings are as follows:

NI-41C -21.0%

NI-42C -23.0%

NI-43C -23.0%

NI-44C -21.0%

PK03-25 P250 RX ALM AXIAL FLUX/ROD POS input 1251 activated

Indicated Reactor Power based on U1169A05 75.2%

U4300A05 is not available.

PPC MAX is 100.2%

Initiating Cue: Unit 1 BOPCO has just completed STP I-1C, Routine Weekly Checks, Attachment 11.1, Step 1.

BOPCO has determined that the AFD for two (2) excore channels are not within the AFD limits.

Review the completed STP Data sheet and determine if his assessment is correct and implement any actions needed based on your review.

Task Standard: STP I-1C, Routine Weekly Checks, Attachment 11.1, Step 1. reviewed for completeness and any actions implemented based on your review.

QUESTIONS: ADMNRCQ1RO
TOPIC: EMERGENCY PLANNING
KA: G2.4.43 (2.8/3.5)

Reference Allowed: NO

References: Notification of Off-Site Agencies and Emergency Response Organization Personnel EP G-3 Rev. 37

QUESTION 1:

What are the NRC time reporting limits for notification of off-site organizations immediately following declaration of an emergency condition, a change in classification level, or event termination?

ANSWER 1:

Notification of off-site organizations is to be made immediately following declaration of an emergency condition per EP G-1, "Accident Classification and Emergency Plan Activation" and immediately following classification level changes.

Notification of the San Luis Obispo County Sheriff's Watch Commander and the State Office of Emergency Services s**hall be within 15 minutes of initial declarations, classification level changes, and event terminations**.

The NRC shall be notified after state and local agencies, but not later than one hour after initial event declaration, classification level change, and event termination.

(Areas underlined are required for full credit.)

Candidate's Response: **SAT** _____ **UNSAT** _____

QUESTIONS: ADMNRCQ1RO
TOPIC: EMERGENCY PLANNING

Reference Allowed: NO

References: Notification of Off-Site Agencies and Emergency Response Organization Personnel EP G-3 Rev. 37

QUESTION 1:

What are the NRC time reporting limits for notification of off-site organizations immediately following declaration of an emergency condition, a change in classification level, or event termination?

QUESTIONS: ADMNRCQ2RO

QUESTIONS: ADMNRCQ2RO
TOPIC: EMERGENCY PLANNING
KA: G2.4.42 (2.3/3.7)

Reference Allowed: YES

References: Backup Emergency Response Facilities EP EF-9 Rev 8

QUESTION 2:

What is the Primary, First and Second Backup for the OSC?

ANSWER 2:

ERF Function	Primary Facility	First Backup	Second Backup
OSC	119' OCC/OWCC Area Turbine Bldg.	140' Turbine Building - Northeast Corner	Administration Building Room 215

Candidate's Response: **SAT** _____ **UNSAT** _____

QUESTIONS: ADMNRCQ2RO
TOPIC: EMERGENCY PLANNING

Reference Allowed: YES

References: Backup Emergency Response Facilities EP EF-9 Rev 8

QUESTION 2:

What is the Primary, First and Second Backup for the OSC?

QUESTIONS: ADMNRCQ3RO
TOPIC: EMERGENCY PLANNING
KA: G2.4.39 (3.3/3.1)

Reference Allowed: YES

References: EP G-2, Activation and Operation of the Interim Site Emergency Organization

QUESTION 3:

What are the responsibilities of the Emergency Liaison Coordinator during an emergency response?

ANSWER 3

Perform emergency notifications to San Luis Obispo County, California State Office of Emergency Services (OES) and the Nuclear Regulatory Commission (NRC) in accordance with EP G-3 until relieved.

(Areas underlined are required for full credit.)

Candidate's Response: **SAT** _____ **UNSAT** _____

QUESTIONS: ADMNRCQ3RO
TOPIC: EMERGENCY PLANNING

Reference Allowed: YES

References: EP G-2, Activation and Operation of the Interim Site Emergency Organization

QUESTION 3:

What are the responsibilities of the Emergency Liaison Coordinator during an emergency response?

QUESTIONS: ADMNRCQ4RO
TOPIC: EMERGENCY PLANNING
KA: G2.3.1 (2.6/3.0)

Reference Allowed: NO

References: EP RB-2, "Emergency Exposure Guides"

QUESTION 4:

1. What is the Total Effective Dose Equivalent (TEDE) allowed for property saving actions?

2. What is the Total Effective Dose Equivalent (TEDE) allowed for life saving actions?

ANSWER 4:

1. Property is 10 rem TEDE
2. Life saving is 25 rem TEDE

(Both parts must be answered correctly for full credit.)

Candidate's Response: **SAT** _____ **UNSAT** _____

QUESTIONS: ADMNRCQ4RO
TOPIC: EMERGENCY PLANNING

Reference Allowed: NO

References: EP RB-2, “Emergency Exposure Guides”

QUESTION 4:

1. What is the Total Effective Dose Equivalent (TEDE) allowed for property saving actions?

2. What is the Total Effective Dose Equivalent (TEDE) allowed for life saving actions?

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJC-01

Title: ESTABLISH EMERGENCY BORATION

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: OP AP-6, Emergency Boration, Rev. 12

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 10 minutes

Critical Step: 4

Job Designation: RO/SRO

KA Number: 004A4.18

Rating: 4.3/4.1

AUTHOR: JACK BLACKWELL DATE: 06/20/2002

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

REV. 0

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 is shutdown in MODE 3 and an unexplained increase in reactivity is causing source range counts to increase.

Initiating Cue: The Shift Foreman directs you to emergency borate.

Task Standard: Emergency boration has been established.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References OP AP-6. 1.2 Reads NOTES prior to Step 1.
	Note: This is an alternate path JPM. Emergency boration will be accomplished via the RWST due to FCV-110A and CVCS-8104 failing closed.
	Step was: Sat: _____ Unsat _____*

*Denotes an entry required on the JPM cover sheet.

**Denotes a Critical Step.

2. Initiate emergency boration using make-up controls.

2.1 Verifies charging in service.

2.2 Places VCT make up control in the BORATE position.

2.3 Sets HC-110 pot setting to 9.0 turns.

2.4 Determines amount of boric acid required per Appendix A.

Note: Appendix A guidance is to borate until control is regained.

2.5 Sets desired gallons in the integrator.

2.6 Places make up controller to the START position and attempts to adjust boric acid flow to at least 30 gpm.

2.7 Determines that FCV-110A is failed closed.

Note: Operator may attempt to open FCV-110A manually.

2.8 Verifies boric acid transfer pump is in high speed and VCT pressure is less than 30 psig.

2.9 Determines that emergency boration flow of at least 32 gpm is not attainable.

Step was: Sat: _____ Unsat _____*

*Denotes an entry required on the JPM cover sheet.

**Denotes a Critical Step.

3. Initiate emergency boration using CVCS-8104.	3.1 Reads NOTE prior to step. 3.2 Places control switch for 8104 in the OPEN position. 3.3 Determines that 8104 will not reposition when selected to OPEN. 3.4 Determines that emergency boration flow of at least 30 gpm is not attainable. **Step was: Sat: _____ Unsat _____***
4. ** Initiate emergency boration using the RWST.	4.1 Opens 8805A and 8805B. 4.2 Closes LCV-112B and LCV-112C. 4.3 Determines that charging flow is less than 90 gpm on CC2, FI-128A. 4.4 Adjusts charging flow to greater than or equal to 90 gpm by using charging flow control valve FCV-128 or HC-459D. **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.

**Denotes a Critical Step.

Initial Conditions: Unit 1 is shutdown in MODE 3 and an unexplained increase in reactivity is causing source range counts to increase.

Initiating Cue: The Shift Foreman directs you to emergency borate.

Task Standard: Emergency boration has been established.

- ❑ Initialize the simulator to IC-4 (HSB,500°F).
- ❑ Enter drill file 1063 or manually insert the following:

Command	Description
set acvcvctw=12000	Increase vct level
ramp pcvcvct=35,5,0	Ensures vct pressure <25 psig
ovr xc2i027c act,1,0,0,d,8	Ensure m/u control to start
mal nisla act,4,600,0,d,0 mal nislb act,4,600,0,d,0	Fail source range ni's
cnv cvc2 2,0,0,5,d,0 #rcvf110a	FCV-110A fails closed.
vlv cvc28 2,0,0,0,d,0 #rcvh8104	8104 fails closed.
run 10	Runs for 10 sec.
anack	Acknowledges alarms

- ❑ Inform the examiner that the simulator setup is complete.
- ❑ Go to RUN when the examinee is given the cue sheet.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJC-03

Title: ALIGN RHR TO CONTAINMENT SPRAY

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: EOP E-1.3, Transfer to Cold Leg Recirculation, Rev. 19

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 10 minutes

Critical Steps: 4, 5, 6, 8, 10, 11, 12

Job Designation: RO/SRO

KA Number: 006A4.05

Rating: 3.9/3.8

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

REV. 0

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 experienced a large break LOCA. RWST level dropped to 33% and a transition to EOP E-1.3 was performed. The procedure is complete through Step 9.

Initiating Cue: You are directed to align Containment Spray from RHR per the procedure.

Task Standard: Containment spray is aligned from the RHR system.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References EOP E-1.3, Step 10.
	Note: If operator notices a red path for FR-P.1, or a magenta path for FR-Z.2, inform him that these FR's were addressed prior to entering EOP E-1.3.
	Step was: Sat: _____ Unsat _____*
2. Check Containment Spray actuated.	2.1 Checks PK01-18, CONTMT SPRAY ACTUATION, ON **OR** PI-934, 935, 936, 937 (VB1) for indication of containment pressure greater than 22 psig.
	Note: Pressure decayed to less than 3 psig following initiation of Containment Spray.
	Step was: Sat: _____ Unsat _____*
3. Check RWST level less than 4%.	3.1 Checks RWST level less than 4% (VB2 LI-920,921,922).
	Step was: Sat: _____ Unsat _____*
4. ** Reset Containment Spray.	4.1 Resets Containment Spray by depressing both Containment Spray reset push buttons (VB1).
	Step was: Sat: _____ Unsat _____*

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

5. ** Stop both containment spray pumps.	5.1 Secures both pumps by placing control switches to STOP RESET position. 5.2 Verifies green indicating lights ON and pump amps go to zero. (Not Critical) **Step was: Sat: _____ Unsat _____***
6. ** Close containment spray pump discharge valves.	6.1 Positions switches for valves 9001A and 9001B to CLOSE 6.2 Verifies green lights ON and red lights OFF. (Not Critical) **Step was: Sat: _____ Unsat _____***
7. Verify both RHR trains in service.	7.1 Verifies both RHR trains are in service. (RHR pump red lights ON and Flow via F1-970B & 971B on VB1.) **Step was: Sat: _____ Unsat _____***
8. ** Close RHR discharge valve to cold legs 1 and 2.	8.1 Cuts in the series contactor for 8809A. 8.2 Closes 8809A, RHR to cold legs 1 and 2. 8.3 Verifies green light ON and red light OFF. (Not Critical) **Step was: Sat: _____ Unsat _____***
9. Open RHR pump 11 discharge valve to spray header A.	9.1 Locates and places the control switch for 9003A in the OPEN position. 9.2 Determines that 9003A will not open. 9.3 Places the control switch for 9003A in the CLOSE or STOP position. **Step was: Sat: _____ Unsat _____***
10. ** Verify valve 8809A OPEN.	10.1 Locates and places the control switch for 8809A in the OPEN position.

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

10.2 Verifies red light ON and green light OFF. (Not Critical)	**Step was: Sat: _____ Unsat _____***
11. ** Close valve 8809B, RHR to cold legs 3 and 4.	11.1 Cuts in the series contactor for 8809B. 11.2 Locates and places the control switch for 8809B in the CLOSED position. 11.3 Verifies 8809B green light ON and red light OFF. (Not Critical) **Step was: Sat: _____ Unsat _____***
12. ** Open valve 9003B, RHR pump 2 to spray header B.	12.1 Locates and places the control switch for 9003B in the OPEN position. 12.2 Verifies 9003B red light ON and green light OFF. (Not Critical) **Note: The only indication of RHR flow to Containment Spray is an increase in RHR pump 11 amps.** **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 experienced a large break LOCA. RWST level dropped to 33% and a transition to EOP E-1.3 was performed. The procedure is complete through Step 9.

Initiating Cue: You are directed to align Containment Spray from RHR per the procedure.

Task Standard: Containment spray is aligned from the RHR system.

- ❑ Type "init ljc139" on the expert screen command line. Click the BYPASS SWCK button on the expert screen to continue after control boards are aligned. This SNAP will also work for this JPM.
- ❑ This SNAP allows entry into EOP E-1.3 at Step 10. RWST level lo-lo alarm is in (4%) and both containment spray pumps are running.
- ❑ Enter drill file 1045, or manually insert the following:

Command	Description
1. vlv css6 2,0,0,0,d,0	Fails 9003A closed.

- ❑ Inform the examiner that the simulator setup is complete.
- ❑ Go to RUN when the examinee references EOP E-1.3.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJC-04

Title: CROSSTIE OF VITAL BUS G TO H

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: EOP ECA-0.3, Restore 4kV Buses, Appendix X, Rev. 11

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 15 minutes

Critical Steps: 2, 4, 5, 6, 7, 8, 10, 11

Job Designation: RO/SRO

KA Number: 062A2.05

Rating: 2.9/3.3

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

REV. 0

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Reactor trip and safety injection occurred with loss of all off-site power. Diesel generator 11 and diesel generator 13 failed due to a lube oil pressure problem. Diesel generator 12 is supplying 4kV bus G. CCW Pp 12 has failed resulting in a complete loss of CCW flow.

Initiating Cue: The Shift Foreman directs you to crosstie 4kV bus G to 4kV bus H per EOP ECA-0.3, Appendix X. Steps 1 and 2 have been completed. You are to begin at Step 3. The Site Emergency Coordinator has directed this implementation.

Task Standard: 4kV bus G on diesel generator 12 is crosstied to 4kV bus H.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References ECA-0.3, Appendix X. **Step was: Sat: _____ Unsat: _____***
2. ** Cut in the DIR PWR, LOSS OF FIELD, & BKR OC PROT RLYS for diesel generator 12.	2.1 Locates the toggle switch and cuts it in. **Step was: Sat: _____ Unsat: _____***
3. Reset SI.	3.1 Checks PK08-21 "Safety Injection Actuation" status. 3.2 Manually depresses both pushbuttons. 3.3 Checks at least one of the following • Monitor Light Box B "Safety Injection" red light OFF, **OR** PK08-21, "Safety Injection Actuation" not ON. **Step was: Sat: _____ Unsat: _____***
4. ** Cutout the auto transfer FCOs for 4kV and 12kV buses.	4.1 Places all auto transfer FCOs to CUTOUT position. **Step was: Sat: _____ Unsat: _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

5. ** Depress all auto transfer reset pushbuttons.	5.1 Depresses all auto transfer reset pushbuttons. 5.2 Verifies blue lights OFF. **Step was: Sat: _____ Unsat: _____***
6. ** Verify OPEN all vital 4kV bus auxiliary feeder breakers.	6.1 Verifies all vital 4kV bus aux feeder breakers OPEN • 52-HH-13 OPEN • 52-HG-13 OPEN • 52-HF- 13 OPEN **Step was: Sat: _____ Unsat: _____***
7. ** Verify OPEN all vital 4kV bus startup feeder breakers.	7.1 Verifies all vital 4kV bus startup feeder breakers OPEN • 52-HH-14 OPEN • 52-HG-14 OPEN • 52-HF-14 OPEN **Step was: Sat: _____ Unsat: _____***
8. ** Verify OPEN the 4kV startup feeder breaker 52-HG-15.	8.1 Verifies 4kV startup feeder breaker 52-HG-15 to 4kV Bus F, G and H OPEN. **Step was: Sat: _____ Unsat: _____***
9. Verify OPEN the 4kV to 480 VAC bus feeder breaker for the deenergized bus to be reenergized.	9.1 Verifies feeder breaker 52-HH-10 OPEN. **Step was: Sat: _____ Unsat: _____***
10. ** Close 4kV startup feeder breaker for the deenergized bus being reenergized.	10.1 Reads cautions prior to closing breaker (not part of critical step.) 10.2 Inserts synchroscope key for 4kV bus H startup feeder breaker 52-HH-14. 10.3 Turns synchroscope switch to ON. 10.4 Closes 4kV startup feeder breaker 52-HH-14 for 4kV bus H. **Step was: Sat: _____ Unsat: _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

11. ** Close the 4kV startup feeder breaker for the bus that will be supplying power to the deenergized bus.	11.1 Inserts synchroscope key for 4kV bus G startup feeder breaker 52-HG-14. 11.2 Turns synchroscope switch to ON. 11.3 CLOSES the 4kV startup feeder breaker 52-HG-14 for 4kV bus G. 11.4 Verifies running diesel generator remains stable. **Step was: Sat: _____ Unsat: _____*** **Stop Time: _____**

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Reactor trip and safety injection occurred with loss of all off-site power. Diesel generator 11 and diesel generator 13 failed due to a lube oil pressure problem. Diesel generator 12 is supplying 4kV bus G. CCW Pp 12 has failed resulting in a complete loss of CCW flow.

Initiating Cue: The Shift Foreman directs you to crosstie 4kV bus G to 4kV bus H per EOP ECA-0.3, Appendix X. Steps 1 and 2 have been completed. You are to begin at Step 3. The Site Emergency Coordinator has directed this implementation.

Task Standard: 4kV bus G on diesel generator 12 is crosstied to 4kV bus H.

☐ Initialize the simulator to the IC-1 (100%, BOL).

☐ Enter drill file 1032 or manually insert the following:

Command	Description
1. mal deg1a act,2,0,0,d,0	Fails DG 11
2. mal deg1c act,2,0,0,d,0	Fails DG 13
3. mal syd1 act,1,1,0,d,0	Loss of offset power
4. mal ppl2a act,0,0,0,d,2	Inadvertent SI, Train A
5. mal ppl2b act,0,0,0,d,2	Inadvertent SI, Train B
6. pmp ccw2 4,0,0,4,d,0	CCW pp 1-2 OC trip
7. loa afw14 act,f,0, 60,d,0	Opens knife switch for AFW pp 1-2
8. loa css8 act,f,0,60,d,0	Opens knife switch for cont. spray pp 1-2
9. loa rhr10 act,f,0,60,d,0	Opens knife switch for RHR pp 1-2
10. loa ccw31 act,f,0,60,d,0	Opens knife switch for CCW pp 1-3
11. loa sis2 act,f,0,60,d,0	Opens knife switch for SI pp 1-2
12. dsc ven14 act,f,0,60,d,0	Opens breaker for CFCU 1-4
13. run 90	freezes simulator after 90 seconds

☐ Inform the examiner that the simulator setup is complete.

☐ Go to RUN when the examinee is given the cue sheet.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJC-05

Title: PERFORM CONTROL ROOM ACTIONS PRIOR TO EVACUATION

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: OP AP-8A, Control Room Inaccessibility - Establishing Hot Standby, Rev. 13

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 10 minutes

Critical Steps: 2, 6, 7, 8, 9, 10

Job Designation: RO/SRO

KA Number: 068AA1.23

Rating: 4.3/4.4

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 is at 100% power. The Security Shift Supervisor has informed the Shift Foreman that a realistic bomb threat has been received and that he recommends evacuation of the control room. Conditions in the control room are not extreme.

Initiating Cue: You are the Unit 1 CO. The Shift Foreman directs you to perform the required actions prior to evacuation of the control room.

Task Standard: The required actions in the control room prior to evacuation have been performed.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References OP AP-8A. **Step was: Sat: _____ Unsat _____***
2. ** Manually trip the reactor.	2.1 Locates reactor trip switch and turns it to the TRIP position. **Step was: Sat: _____ Unsat _____***
3. Verify reactor trip.	3.1 Checks reactor trip and bypass breakers open. 3.2 Checks rod bottom lights ON. 3.3 Checks decreasing reactor power. **Step was: Sat: _____ Unsat _____***
4. Verify turbine tripped.	4.1 Checks all 4 stop valves closed. **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

5. Manually initiate a unit trip and verify bus transfers.	5.1 Locates the unit trip switch and turns it to the TRIP position.
	Note: If a unit trip was automatically initiated, a manual trip is NOT necessary; only verification of bus transfers.
	5.2 Verifies all 4kV and 12kV buses transfer to startup power.
	5.3 Verifies all vital 4kV buses are energized by observing startup feeder breakers closed and bus potential lights ON (may also flag breakers).
	Step was: Sat: _____ Unsat _____*
6. ** Manually close MSIVs and bypass valves.	6.1 Manually selects CLOSE on all MSIV control switches.
	Note: Step 6.2 is regarded as a good operator practice. It is not a required element of the crtical step.
	6.2 Checks bypass valves closed.
	Step was: Sat: _____ Unsat _____*
7. ** Transfer charging suction to the RWST.	7.1 Reads note prior to step
	7.2 Selects OPEN on 8805A and/or 8805B control switches
	Note: Step 7.3 is not required if VCT pressure is less than 28 psig.
	7.3 Selects CLOSE on LCV-112B or 112C control switches.
	Step was: Sat: _____ Unsat _____*

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

8. ** Trip all reactor coolant pumps.	8.1 Selects STOP on all four reactor coolant pump control switches. **Step was: Sat: _____ Unsat _____***
9. ** Reset 4kV vital auto transfer relays.	9.1 Depresses the three 4kV vital bus auto transfer relay reset push buttons. **Step was: Sat: _____ Unsat _____***
10. ** Shutdown all but one running condensate/booster pump sets.	10.1 Ensures MAN/AUTO selector switch in MAN for pump set(s) to be secured. 10.2 Places pump control switch(es) to STOP for pump set(s) to be secured and leaves one set running. **Step was: Sat: _____ Unsat _____***
11. Open or check open RCS hot leg and pressurizer liquid space sample valves.	11.1 Verifies open NSS-9356A and 9356B. 11.2 Verifies open NSS-9355A and 9355B. **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

12. Collect equipment needed from the control room.

12.1 Asks for the fire brigade, security key rings, and radios.

****

Cue: Inform examinee that the Shift Foreman will transport the Fire Brigade, security key rings, and radios to the hot shutdown panel.

****

12.2 Exits the control room to proceed to the hot shutdown panel.

Step was: Sat: _____ Unsat _____*

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 is at 100% power. The Security Shift Supervisor has informed the Shift Foreman that a realistic bomb threat has been received and that he recommends evacuation of the control room. Conditions in the control room are not extreme.

Initiating Cue: You are the Unit 1 CO. The Shift Foreman directs you to perform the required actions prior to evacuation of the control room.

Task Standard: The required actions in the control room prior to evacuation have been performed.

- ☐ Initialize the simulator to the IC-1 (100%, BOL).
- ☐ Inform the examiner that the simulator setup is complete.
- ☐ Go to RUN when the examinee is given the cue sheet.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJC-06

Title: RESPOND TO HIGH ULTIMATE HEAT SINK TEMPERATURE

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: OP AP-11, Malfunction of CCW System, Section A, Rev. 19A;
OP E-5:II ASW System Two CCW Heat Exchanger Operation, Rev. 7A

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 10 Minutes

Critical Steps: 3,4,7,8,10

Job Designation: RO/SRO

Task Number: 008A4.10

Rating: 3.1/3.1

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 is at 100% power. During performance of STP I-1A it was determined that the Ultimate Heat Sink temperature was greater than 64°F.

Initiating Cue: Unit 1 Shift Forman directs you to place both CCW heat exchangers in service using OP AP-11 "Malfunction of the CCW System" Section A , Step 5.

Task Standard: Both CCW Heat exchangers are in service.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References OP AP-11 Step 5 1.2 Determines need to reference OP E-5:II 1.3 References OP E-5:II - Step 6.1 Preferred Method **Step was: Sat: _____ Unsat _____***
2. Notifies Unit 2	2.1 Advises Unit 2 CO to place Unit 2 standby ASW pump in manual. ********** **Cue: Unit 2 Standby ASW pump is in manual.** ********** **Step was: Sat: _____ Unsat _____***
3. **Opens second heat exchanger ASW inlet valve.	3.1 Opens FCV-603 **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

4. **Starts second ASW pump	4.1 Monitors inservice Heat Exchanger DP on PI -45. 4.2 Selects Manual on ASW Pp 1-2 Standby selector switch. 4.3 Starts ASW Pp 1-2 4.4 Determines that ASW Pp 1-2 trips on thermal overload. 4.5 Notifies SFM of ASW Pp 1-2 failure. ********** **Cue: If asked, SFM directs that the second CCW Heat Exchanger be placed in service.** ********** **Step was: Sat: _____ Unsat _____***
5. Obtain the correct procedure	5.1 References OP E-5:II - Step 6.2 Alternate Method. **Step was: Sat: _____ Unsat _____***
6. Place Standby Pp in Manual	6.1 Verifies that ASW Pp 1-2 Standby selector switch is in manual. **Step was: Sat: _____ Unsat _____***
7. **Open or check open ASW Pump discharge crosstie valves.	7.1 Verifies Red light on and Green light off for FCV-495. 7.2 Verifies Red Light on and Green light off for FCV-496 **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

8. ** Opens second heat exchanger ASW inlet valve	8.1 Opens or checks open FCV-603 **Note: Valve was opened previously** **Step was: Sat: _____ Unsat _____***
9. Monitor ASW Pp. performance	9.1 Monitors ASW Pp 1-1 motor amps and flows **Step was: Sat: _____ Unsat _____***
10. **Cut in CCW to second Heat Exchanger	10.1 Opens FCV-431 **Note: Task is complete at this step** **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions:	Unit 1 is at 100% power. During performance of STP I-1A it was determined that the Ultimate Heat Sink temperature was greater than 64°F.
Initiating Cue:	Unit 1 Shift Forman directs you to place both CCW heat exchangers in service using OP AP-11 “Malfunction of the CCW System” Section A , Step 5.
Task Standard:	Both CCW Heat exchangers are in service.

☐ Initialize the simulator to IC-01 (100%, BOL).

☐ Run Drill File 6206

OR

☐ Manually insert the following:

Command	Description
1. plp aux1 act, 64.2,0,0,d,0 #TOCEAN	Raises UHS temperature to greater than 64°F
2. pmp asw2 6,8,0,0,d,0	Overcurrent trip of ASW Pp 1-2 when started

☐ Inform the examiner that the simulator setup is complete.

☐ Go to RUN when the examinee is given the cue sheet.

Nuclear Power Generation
Diablo Canyon Power Plant
Job Performance Measure

Number: NRCLJC-08

Title: PERFORM THE ACTIONS FOR A REACTOR TRIP WITH A SAFETY INJECTION, APPENDIX E

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: EOP E-0, Reactor Trip or Safety Injection, Rev. 27

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 10 minutes

Critical Steps: 1, 2, 3

Job Designation: RO/SRO

KA Number: 006A2.02

Rating: 3.9/4.3

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: EOP E-0, Appendix E

Initial Conditions: Unit 1 is operating at 100% when a Safety Injection occurs. No personnel are in containment.

Initiating Cue: You are the Unit 1 Control Operator. The SFM has asked you to perform Step 11 of Appendix E, of EOP E-0.

Task Standard: Step 11 of EOP E-0 Appendix E has been completed.

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Start Time: _____

	Step		Expected Operator Actions
1.	**Check BLDG AND SFGDS MODE OR SFGDS MODE	1.1	Locates Auxiliary Building Vent System on VB4
		1.2	Manually selects BLDG AND SFGDS MODE
			Step was: SAT:____ Unsat: ____*
2.	**Check DMPR/FAN FAIL IND PNL lights – OFF	2.1	Locates DMPR/FAN FAIL IND PNL on VB4
		2.2	Determines lights ON
		2.3	Selects S Signal Test (POV-1 and POV-2)
			Step was: SAT:____ Unsat: ____*

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

	Step		Expected Operator Actions
3.	**Verify Unit 1 Mode 4 status light ON	3.1	Locates CR Vent System on VB4
		3.2	Manually selects MODE 3 for BOTH units
		3.3	Verifies dampers shift for lights OFF on DMPR/FAN FAIL IND PNL
		3.4	Verifies dampers shift for CR VENT and CR PRESS SYS
			Step was: SAT:____ Unsat: ____*
4.	Verify remaining indications	4.1	Verifies Unit 2 Pressurization fans S96 or S97 ON
			Checks Unit 1 and Unit 2 streamers NOT hanging down
			Verifies Containment Iodine Removal Fans E-15 and E-16 OFF
			Step was: SAT:____ Unsat: ____*

Stop Time: _____

Total Time: _____

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 is operating at 100% when a Safety Injection occurs. No personnel are in containment.

Initiating Cue: You are the Unit 1 Control Operator. The SFM has asked you to perform Step 11 of Appendix E, of EOP E-0.

Task Standard: Step 11 of EOP E-0 Appendix E has been completed.

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

☐ Initialize the simulator to “nrcljc8” or “init nrcljc8” in expert command screen.
☐ Enter drill file 6009 or manually insert the following:

Command	Description
1. MAL PPL3A act 3,0,0,d,0	
2. MAL PPL3B act 3,0,0,d,0	
3. MAL RCS1 act 1,1,0,d,0	

☐ Run 3 minutes, acknowledge alarms and freeze.
☐ Inform the examiner that the simulator setup is complete.
☐ Go to RUN when the examinee is given the cue sheet.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJC-09

Title: MAKEUP TO THE RWST

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: EOP ECA-1.1, Loss of Emergency Coolant Recirculation, Rev. 15

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 10 minutes

Critical Steps: 3, 5, 6, 8, 9

Job Designation: RO/SRO

KA Number: 004A2.14

Rating: 3.8/3.9

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: A Safety Injection has occurred. ECCS was being transferred to Cold Leg Recirculation, when Emergency Coolant Recirculation was lost.

Initiating Cue: Shift Foreman directs you to makeup to the RWST from the blender using Appendix M of EOP ECA-1.1.

Task Standard: Add makeup to the RWST at approximately 2000 ppm concentration.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References EOP ECA-1.1, Appendix M. **Step was: Sat: _____ Unsat: _____***
2. Place makeup control switch in STOP.	2.1 Positions 1/MU control switch to STOP on CC2. **Step was: Sat: _____ Unsat _____***
3. ** Place makeup mode selector switch in MANUAL.	3.1 Position the Makeup MODE SELECT switch 43/MU to MAN on CC2. **Step was: Sat: _____ Unsat: _____***
4. Verify FCV-110A and FCV-111A control switches in Auto.	4.1 Verifies the control switches for FCV-110A and FCV-111A are in AUTO on VB2. **Step was: Sat: _____ Unsat: _____***
5. ** Select to Close FCV-110B and FCV-111B.	5.1 Positions switches to CLOSE for FCV-110B and FCV-111B on VB2. **Step was: Sat: _____ Unsat: _____***
6. ** Manually adjust controllers.	6.1 Set HC-111 for 74 gpm and HC-110 for 36 gpm on CC2. **Step was: Sat: _____ Unsat _____***
7. Set Batch Integrators.	7.1 Sets both batch integrators for 74,000 gallons primary water and 36,000 gallons boric acid on CC2. **Step was: Sat: _____ Unsat: _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

8. **Locally perform valve manipulations.	8.1 Directs Nuclear Operator to locally open CVCS-8466, Blender Outlet, to LHUT and RWST; **AND** 8.2 Opens CVCS-8467, Blender Outlet to RWST; **AND** 8.3 Closes CVCS-8258, Blender to LHUT Inlet. ********** **Cue: Local valves have been aligned to the proper positions.** ********** **Step was: Sat: _____ Unsat: _____***
9. **Turn makeup control switch to start.	9.1 Places the Makeup Control Switch 1/MU to START on CC2. **Step was: Sat: _____ Unsat: _____***
10. Operator verifies flow.	10.1 Observes 100 gpm flow on FI-111 and approximately 40 gpm on FI-110 on VB2. (May use FR-110 recorder on CC2.) **Note: May take manual control to ensure proper flow rates established.** **Step was: Sat: _____ Unsat: _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: A Safety Injection has occurred. ECCS was being transferred to Cold Leg Recirculation, when Emergency Coolant Recirculation was lost.

Initiating Cue: Shift Foreman directs you to makeup to the RWST from the Blender using APPENDIX M of EOP ECA-1.1.

Task Standard: Add makeup to the RWST at approximately 2000 ppm concentration.

- ❑ Type "init ljc027" on the expert screen command line. Click the BYPASS SW CHECK button on the expert screen to continue after control boards are aligned.
- ❑ Enter drill file 1117 or manually insert the following:

Command	Description
1. pmp rhr1 4,0,0,0,d,0	Trip RHR pp11 on O.C.
2. pmp rhr2 4,0,0,0,d,0	Trip RHR pp12 on O.C.
3. loa cvc64 act,1,0,0,c, xc2i027c	OPENS 8467 when M/U control goes to START.
4. loa cvc63 act,1,0,0,c, xc2i027c	OPENS 8466 when M/U control goes to START.
5. Set CCVCRWST=.4	Sets up proper boric acid flow to RWST.
6. Run 5	

- ❑ Inform the examiner that the simulator setup is complete.
- ❑ Go to RUN when the examinee is given the cue sheet

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJC-09

Title: MAKEUP TO THE RWST

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: EOP ECA-1.1, Loss of Emergency Coolant Recirculation, Rev. 15

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 10 minutes

Critical Steps: 3, 5, 6, 8, 9

Job Designation: RO/SRO

KA Number: 004A2.14

Rating: 3.8/3.9

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: A Safety Injection has occurred. ECCS was being transferred to Cold Leg Recirculation, when Emergency Coolant Recirculation was lost.

Initiating Cue: Shift Foreman directs you to makeup to the RWST from the blender using Appendix M of EOP ECA-1.1.

Task Standard: Add makeup to the RWST at approximately 2000 ppm concentration.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References EOP ECA-1.1, Appendix M. **Step was: Sat: _____ Unsat: _____***
2. Place makeup control switch in STOP.	2.1 Positions 1/MU control switch to STOP on CC2. **Step was: Sat: _____ Unsat _____***
3. ** Place makeup mode selector switch in MANUAL.	3.1 Position the Makeup MODE SELECT switch 43/MU to MAN on CC2. **Step was: Sat: _____ Unsat: _____***
4. Verify FCV-110A and FCV-111A control switches in Auto.	4.1 Verifies the control switches for FCV-110A and FCV-111A are in AUTO on VB2. **Step was: Sat: _____ Unsat: _____***
5. ** Select to Close FCV-110B and FCV-111B.	5.1 Positions switches to CLOSE for FCV-110B and FCV-111B on VB2. **Step was: Sat: _____ Unsat: _____***
6. ** Manually adjust controllers.	6.1 Set HC-111 for 74 gpm and HC-110 for 36 gpm on CC2. **Step was: Sat: _____ Unsat _____***
7. Set Batch Integrators.	7.1 Sets both batch integrators for 74,000 gallons primary water and 36,000 gallons boric acid on CC2. **Step was: Sat: _____ Unsat: _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

8. **Locally perform valve manipulations.	8.1 Directs Nuclear Operator to locally open CVCS-8466, Blender Outlet, to LHUT and RWST; **AND** 8.2 Opens CVCS-8467, Blender Outlet to RWST; **AND** 8.3 Closes CVCS-8258, Blender to LHUT Inlet. ********** **Cue: Local valves have been aligned to the proper positions.** ********** **Step was: Sat: _____ Unsat: _____***
9. **Turn makeup control switch to start.	9.1 Places the Makeup Control Switch 1/MU to START on CC2. **Step was: Sat: _____ Unsat: _____***
10. Operator verifies flow.	10.1 Observes 100 gpm flow on FI-111 and approximately 40 gpm on FI-110 on VB2. (May use FR-110 recorder on CC2.) **Note: May take manual control to ensure proper flow rates established.** **Step was: Sat: _____ Unsat: _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: A Safety Injection has occurred. ECCS was being transferred to Cold Leg Recirculation, when Emergency Coolant Recirculation was lost.

Initiating Cue: Shift Foreman directs you to makeup to the RWST from the Blender using APPENDIX M of EOP ECA-1.1.

Task Standard: Add makeup to the RWST at approximately 2000 ppm concentration.

- ❑ Type "init ljc027" on the expert screen command line. Click the BYPASS SW CHECK button on the expert screen to continue after control boards are aligned.
- ❑ Enter drill file 1117 or manually insert the following:

Command	Description
1. pmp rhr1 4,0,0,0,d,0	Trip RHR pp11 on O.C.
2. pmp rhr2 4,0,0,0,d,0	Trip RHR pp12 on O.C.
3. loa cvc64 act,1,0,0,c, xc2i027c	OPENS 8467 when M/U control goes to START.
4. loa cvc63 act,1,0,0,c, xc2i027c	OPENS 8466 when M/U control goes to START.
5. Set CCVCRWST=.4	Sets up proper boric acid flow to RWST.
6. Run 5	

- ❑ Inform the examiner that the simulator setup is complete.
- ❑ Go to RUN when the examinee is given the cue sheet

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

Job Performance Measure

Number: NRCLJC-10

Title: PLACE CFCU DRAIN COLLECTION SYSTEM IN SERVICE

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: AR PK01-17, CFCU DRAIN LEVEL HI, Rev. 12
AR PK11-09, RM11 AND RM12 LOW FLOW, Rev. 6
ITS 3.4.15, RCS LEAK DETECTION INSTRUMENTATION

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 10 minutes

Critical Steps: 5

Job Designation: RO/SRO

KA Number: 006A2.05

Rating: 3.4/3.5

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 is operating at 100% power with all systems aligned for normal full power operation.

Initiating Cue: PK11-09, RE-11 AND RE-12 LOW FLOW alarm is received.

Task Standard: The appropriate action is taken based on procedure guidance.

Start Time: _____

	Step		Expected Operator Actions
1.	Obtain correct procedure	1.1	References AR PK11-09 **Step SAT:_____ UNSAT:_____***
2.	Check annunciator typewriter print out	2.1	Checks printout to find RM-11/12 low flow Step SAT:_____ UNSAT:_____*
3.	Check for blown fuses and pump operations	3.1	Checks RMS panel for RM-11/12 pump operation
		3.2	Finds pump failure for RM-11/12
		3.3	Dispatches Operator to investigate ********** CUE: Aux Building NO verifies pump inoperability. ********** **Step SAT:_____ UNSAT:_____***
4.	Checks ITS 3.4.15 and PK01-17 for guidance	4.1	Checks PK01-17 and determines CFCUs must be in slow service for the monitoring system.
		4.2	Checks ITS 3.4.15 and determines CFCU monitoring system must be in service per 3.4.15.c and SR 3.4.13.1 **Step SAT:_____ UNSAT:_____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Step		Expected Operator Actions
5. ** Shift selected CFCU to SLOW Speed	5.1	Shift selected running CFCU to slow speed
	5.2	Verify proper Fan operation
	5.3	Close associated fan drain valve
		Step SAT:_____ UNSAT:_____*

Stop Time: _____

Total Time: _____

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 is operating at 100% power with all systems aligned for normal full power operation.

Initiating Cue: PK11-09, RE-11 AND RE-12 LOW FLOW alarm is received.

Task Standard: The appropriate action is taken based on procedure guidance.

☐ Initialize the simulator to IC 1.
☐ Insert Drill File 6210
OR
☐ Manually insert the following:

Command	Description
1. SER 0851 ACT,1,0,0,d,0	0851 RE-11 and RE-12 Low Flow
2. OVR xrmoh05o ACT,1,0,0,d,0	RI-11 Low Flow Indicator Lamp Red ON
3. OVR xrmoh12m ACT,0,0,0,d,0	RI-11 Pump Indicator Lamp Amb OFF

☐ Go to RUN for 10 seconds.
☐ Inform the examiner that the simulator setup is complete.
☐ Go to RUN when the examinee is given the cue sheet.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJC-12

Title: ESTABLISH FEED FLOW FROM THE CONDENSATE SYSTEM

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: EOP FR-H.1, Respond to Loss of Secondary Heat Sink, Rev. 18

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 15 minutes

Critical Steps: 4, 5, 6

Job Designation: RO/SRO

KA Number: 074EA1.25

Rating: 3.8/3.8

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 experienced a reactor trip from 100% power. The crew completed actions for a reactor trip and diagnosed that no auxiliary feedwater flow existed, with no immediate possibility of regaining AFW flow. The crew initiated loss of secondary heat sink actions, but could not establish main feedwater flow. The RCS was depressurized to between 1500 and 1865 psig and SI was blocked.

Initiating Cue: The Shift Foreman directs you to establish feed flow from the condensate system per EOP FR-H.1, Step 9.

Task Standard: Condensate flow established to at least two steam generators with steam generator wide range level increasing.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References EOP FR-H.1. 1.2 Reviews CAUTION and NOTE prior to Step 9. ********** **Cue: Begin with Step 9.b.** ********** **Step was: Sat: _____ Unsat: _____***
2. Open main feedwater isolation valves and control or bypass valves.	**Note: It is not necessary to reset Safety Injection, cycle the reactor trip breakers, or open the feedwater isolation valves if Safety Injection did not actuate.** 2.1 Observes that SI is not actuated. 2.2 Observes that the Feedwater Isolation Signal is not actuated. 2.3 Observes that the feedwater isolation valves are open. 2.4 Observes that the feedwater control valves are open. **Note: Operator may throttle or close feedwater control, or open bypass valves to control feed flow.** **Step was: Sat: _____ Unsat: _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

3. Bypass feedwater heaters and condensate demineralizes.	3.1 Opens the bypass valve for the feedwater heaters, FCV-55. 3.2 Opens the bypass valve for the condensate demins, FCV-230. **Step was: Sat: _____ Unsat: _____***
4. ** Depressurize TWO intact steam generators to less than 490 psig.	4.1 Closes the MSIVs and verifies closed the MSIV Bypass Valves. 4.2 Dumps steam using the 10% atmospheric dumps. **Step was: Sat:_____ Unsat_____** ** **Cue: Another operator will maximize charging** **
5. ** Reset Feedwater Isolation.	5.1 Observes the Feedwater Isolation Signal actuate when Tave decreases below 554°F. 5.2 Resets the Feedwater Isolation Signal by depressing the reset push button for each train. **Note: Operator may cycle reactor trip breakers prior to resetting the Feedwater Isolation Signal.** 5.3 Verifies the feedwater control or control bypass valves are open (not part of critical step). **Step was: Sat: _____ Unsat: _____*** **Note: SG Levels MAY decrease Below 24% (Bleed and Feed entry requirement). CUE operator that SG levels are ABOVE 25%. Bleed and Feed is NOT desired.**

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Note: Step 6.3 only critical step.

6. ** Establish feed flow to TWO steam generators.

6.1 Continues dumping steam until both steam generators are less than 490 psig.

6.2 Controls steam generator pressure in MANUAL

OR

sets 10% potentiometer to approximately 4.08 turns in AUTO.

6.3 Establishes feed flow to two steam generators.

Step was: Sat: _____ Unsat: _____*

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 experienced a reactor trip from 100% power. The crew completed actions for a reactor trip and diagnosed that no auxiliary feedwater flow existed, with no immediate possibility of regaining AFW flow. The crew initiated loss of secondary heat sink actions, but could not establish main feedwater flow. The RCS was depressurized to between 1500 and 1865 psig and SI was blocked.

Initiating Cue: The Shift Foreman directs you to establish feed flow from the condensate system per EOP FR-H.1, Step 9.

Task Standard: Condensate flow established to at least two steam generators with steam generator wide range level increasing.

☐ Initialize the simulator to IC-1 (100%, BOL).

☐ Enter drill file 1053 or manually insert the following:

Command	Description
1. mal afwl act,0,0,d,0	Trip afw pp 11
2. pmp afw1 4,0,0,0,d,0	Trip afw pp 12
3. pmp afw2 4,0,0,0,d,0	Trip afw pp 13
4. mal mfw2a act,25,0,0,d,0	Trip mfw pump 11
5. mal mfw2b act, 25, 0,0,d,0,	Trip mfw pump 12
6. loa cndl act, 1,0,0,d,0	Break condenser vacuum
7. delm all	Deletes monitor points
8. monv bsgnwrr1	Monitors system generator wide range level
9. ovr xv2i260o act,1,0,0,c,fnispr.lt.10,5	Trips rcp 11
10. ovr xv2i261o act,1,0,0,c,fnispr.lt.10,5	Trips rcp 12
11. ovr xv2i262o act,1,0,0,c,fnispr.lt.10,5	Trips rcp 13
12. ovr xv2i263o act,1,0,0,c,fnispr.lt.10,5	Trips rcp 14
13. run	Runs simulator
14. vlv pzr4 2,1.0,0,0,d,prcmstar.lt.1665	Open porv to 100%
15. ovr xc2i023c act,1,0,0,c,jpplp11,20	Block lo pressurizer pressure SI
16. ovr xc2i024c act,1,0,0,c,jpplp11,20	Block lo pressurizer pressure SI
17. ovr xc2i025c act,1,0,0,c,jpplp11,20	Block lo steam line pressure SI
18. ovr xc2i026c act,1,0,0,c,jpplp11,20	Block lo steam line pressure SI
19. frz when rrcp455c.lt.0.001	Freeze sim when porv recloses

☐ Perform the following:

1. Set SG 10% pots to 8.38 turns (to maintain 1000 psig per FR-H.1, Step 6.e.)
2. Select LCV-12 to CONT ONLY.

☐ Run 1 to ensure PORV closed.

☐ Inform the examiner that the simulator setup is complete.

☐ Go to RUN when the examinee is given the cue sheet.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

Job Performance Measure

Number: NRCLJC-13

Title: Initial Checks for FR-C.1

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: EOP FR-C.1, Response to Inadequate Core Cooling, Rev. 14A

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 10 minutes

Critical Steps: 1, 4

Job Designation: RO/SRO

KA Number: 074EA1.27

Rating: 4.2/4.2

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

REV. 0

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 has experienced a Reactor Trip and Safety Injection. CCP 1-1, SI pump 1-1, RHR pump 1-1, AFW pump 1-1 and 1-3 have all failed to start or tripped shortly after starting. The STA has determined that a RED Path exists on Core Cooling. The SFM has exited E-0 and entered into FR-C.1, Response to Inadequate Core Cooling. The SFM has sent an NO to establish RCP support conditions and to rack in the Accumulator Breakers.

Initiating Cue: The SFM has directed you to perform the step 1 – 3 of FR-C.1 as needed to establish ECCS flow.

Task Standard: ECCS flow is established.

Start Time: _____

	Step		Expected Operator Actions
1.	** Reset SI	1.1	Pushes both SI reset buttons and observes SI signal reset **Step SAT:_____ UNSAT:_____***
2.	Check ECCS Valve Alignment	2.1	Activates monitor lights for MLB C by turning the Monitor Test Light Switch to ON
		2.2	Uses white status lights to verify ECCS valve alignment ********** CUE: IF asked about Accumulator valves, NO is racking in breakers and will contact Control Room when completed. **********
		2.3	Attempts to open 8801 A/B **Step SAT:_____ UNSAT:_____***
3.	Verify ECCS Flow in All Trains	3.1	Checks FI-917, notes Charging Injection Flow is < 100 gpm
		3.2	Verifies only CCP 1-2 running with < 48 amps
		3.3	Attempts to align valves with MLB A and C
		3.4	Verifies manual flowpath alignment per OP K-10G1 ********** CUE: Aux Building NO is verifying flowpath per OP K10G1. ********** **Step SAT:_____ UNSAT:_____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Step	Expected Operator Actions
4. ** Establish alternate ECCS injection flow path	4.1 Aligns normal charging for running CCP by opening: a. 8805A/B b. FCV-128 c. HCV-142 d. 8107/8108 e. 8146 4.2 Verifies CCP 1-2 running and flow and amps indicated through normal charging lineup **Step SAT:_____ UNSAT:_____*** **Stop Time: _____** **Total Time: _____**

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 has experienced a Reactor Trip and Safety Injection. CCP 1-1, SI pump 1-1, RHR pump 1-1, AFW pump 1-1 and 1-3 have all failed to start or tripped shortly after starting. The STA has determined that a RED Path exists on Core Cooling. The SFM has exited E-0 and entered into FR-C.1, Response to Inadequate Core Cooling. The SFM has sent an NO to establish RCP support conditions and to rack in the Accumulator Breakers.

Initiating Cue: The SFM has directed you to perform the step 1 – 3 of FR-C.1 as needed to establish ECCS flow.

Task Standard: ECCS flow is established.

☐ Initialize the simulator to snap NRCLJC13 - "init NRCLJC13"
☐ RUN Drill File 6213
OR
☐ Manually insert the following:

Command	Description
1. OVR xv2d162m ACT,30.0,0,0,d,xv2i229o	CP 12 AMPS METER SIGNAL XV2D indicate 45 amps, conditional clear on CVCS-8146 opening which will then indicate 59 amps.

☐ Go to RUN for 2 minutes.
☐ Inform the examiner that the simulator setup is complete.
☐ Go to RUN when the examinee is given the cue sheet.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

Job Performance Measure

Number: NRCLJC-14

Title: PZR Pressure Control During SI Termination

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: EOP E-1.1, SI Termination

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment:

Critical Steps: 3, 4

Job Designation: RO/SRO

Task Number: 010A.02

Rating: 3.9/3.9

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

REV. 0

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: The plant is recovering from a spurious SI and has transition from E-0 to E-1.1, SI Termination. During the recovery, the 12kV bus was momentarily deenergized and forced recirculation was lost.

Initiating Cue: The SFM has directed you to perform step 19 of E-1.1, and establish pressure control using Aux Spray.

Task Standard: Aux Spray is in service.

Start Time: _____

	Step		Expected Operator Actions
1.	Obtain correct procedure	1.1	References EOP E-1.1
		1.2	Read Caution and note before Step 19
			Step SAT:_____ UNSAT:_____*
2.	Attempt to turn on PZR heaters and operate normal spray as necessary to maintain PZR pressure	2.1	Recognizes normal spray will not work because of loss of forced flow
		2.2	Verify heaters on
			Step SAT:_____ UNSAT:_____*
3.	Verify Letdown in Service	3.1	Verifies letdown path and flow • 8152 open • LCV-459/460 open • 8149 A/B/C – at least one open • Verify Flow on FI-134 or PPC
			Step SAT:_____ UNSAT:_____*

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Step	Expected Operator Actions
4. ** Uses Aux Spray and heaters to control pressure	4.1 Opens both PCV-455A and B
	4.2 Opens 8145 and 8148 Aux Spray Valves
	4.3 Close 8146 and 8147 (Normal and Alt Chg to LP4 and LP3 Cold Leg vlvs)
	4.4 Controls pressure by: • Adjusting charging line flow • Bypasses Aux Spray with PCV-455 A/B • Controls PZR heaters as needed • Maintains ? T between Aux Spray and PZR < 320° as seen on TI-454 and TI-126
	4.5 Maintains RCS pressure between 2200 psig and 2250 psig using Aux Spray and heaters
	Step SAT:_____ UNSAT:_____*

Stop Time: _____

Total Time: _____

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: The plant is recovering from a spurious SI and has transition from E-0 to E-1.1, SI Termination. During the recovery, the 12kV bus was momentarily deenergized and forced recirculation was lost.

Initiating Cue: The SFM has directed you to perform step 19 of E-1.1, and establish pressure control using Aux Spray.

Task Standard: Aux Spray is in service.

- ☐ Initialize the simulator to snap NRCLJC14 - “init NRCLJC14”
- ☐ Inform the examiner that the simulator setup is complete.
- ☐ Go to RUN when the examinee is given the cue sheet.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJC-18

Title: MANUAL START DIESEL GENERATOR 12

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: EOP E-0, Reactor Trip or Safety Injection, Rev. 27

Alternate Path: Yes _____ No X

Time Critical: Yes _____ No X

Time Allotment: 5 minutes

Critical Steps: 2, 3

Job Designation: RO/SRO

KA Number: 064A4.06

Rating: 3.9/3.9

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 has had a Safety Injection. Diesel Generator 12 did not start.

Initiating Cue: You are the Unit 1 Control Operator. You are directed by the Shift Foreman to start diesel generator 12 from the control room, in accordance with EOP E-0, Appendix E, Step 12a RNO.

Task Standard: Diesel Generator 12 started and in Auto.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References EOP E-0. **Step was: Sat: _____ Unsat _____***
2. ** Place diesel generator 12 in MANUAL.	2.1 Places diesel generator 12 MODE SEL switch in the MANUAL position. **Step was: Sat: _____ Unsat _____***
3. ** Start diesel generator 12.	3.1 Starts diesel generator 12 using the START/STOP switch. **Step was: Sat: _____ Unsat _____***
4. Verify Diesel Generator 12 is running.	4.1 Verifies 900 rpm. 4.2 Verifies 110 VAC to 130 VAC. 4.3 Verifies 59 Hz to 61 Hz. **Step was: Sat: _____ Unsat _____***
5. Go back to ISOC.	5.1 Place Mode Sel Switch to Auto. **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 has had a Safety Injection. Diesel Generator 12 did not start.

Initiating Cue: You are the Unit 1 Control Operator. You are directed by the Shift Foreman to start diesel generator 12 from the control room, in accordance with EOP E-0, Appendix E, Step 12a RNO.

Task Standard: Diesel Generator 12 started and in Auto.

- ❑ Initialize the simulator to the IC-1 (100%, BOL).
- ❑ Enter drill file 1085 or manually insert the following:

Command	Description
1. ramp jdsgstal(2),t,0,0,d,.not.xv4i191c	Fails DG 12 control to MANUAL Defeats AUTO START
2. mal ppl2a act,0,0,0.d.2	Inadvertent SI Actuation Train A
3. mal ppl2b act,0,0,0,d,2	Inadvertent SI Actuation Train B
4. fzr when zpplcntr.gt.59.9	Freezes simulator when SI Times Timer Out
5. run	Freezes simulator when SI Times Timer Out

- ❑ Perform the following:
- ❑ Inform the examiner that the simulator setup is complete.
- ❑ Go to RUN when the examinee is given the cue sheet.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJC-22

Title: INITIATE BLEED AND FEED FOR A LOSS OF HEAT SINK

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: EOP FR-H.1, Loss of Secondary Heat Sink, Rev. 18

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 15 minutes

Critical Steps: 2, 8

Job Designation: RO/SRO

KANumber: 002A2.04

Rating: 4.3/4.6

AUTHOR: JACK BLACKWELL DATE: 06/20/2002

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 experienced a loss of secondary heat sink. EOP FR-H.1 was implemented and all efforts to establish AFW, MFW, and condensate flow failed.

Initiating Cue: All steam generator wide range levels are less than 23% and the Shift Foreman directs you to establish RCS heat removal beginning with step 12 of EOP FR-H.1.

Task Standard: Adequate RCS feed and bleed path is established.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References EOP FR-H.1. 1.2 Reads CAUTION prior to Step 12. **Step was: Sat: _____ Unsat _____***
2. ** Actuate Safety Injection.	2.1 Takes Safety Injection switch to ACTUATE on VB-1 or CC-2. **Step was: Sat: _____ Unsat _____***
3. Verify RCS feed paths.	3.1 Checks at least one CCP or Safety Injection pump running, red light ON. 3.2 Checks valve alignment of operating ECCS pumps for proper emergency alignment, by checking VB1 and VB2 valves, or monitor lights. **Step was: Sat: _____ Unsat _____***
4. Reset Safety Injection.	4.1 Locates Safety Injection reset. 4.2 Pushes Safety Injection reset push buttons. **Note: The 60 second Safety Injection timer will have to time out before Safety Injection can be reset.** 4.3 Checks PK08-22 alarms or red SI monitor light goes OFF. (Not Critical) **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

5. Reset Containment Isolation Phase A and Phase B.	**Note: It is not necessary to reset Phase B if Phase B is not actuated.** 5.1 Locates Phase A and Phase B reset push buttons. 5.2 Pushes Phase A and Phase B reset push buttons. 5.3 Checks PK02-01 goes OUT or red monitor lights go OFF. **Step was: Sat: _____ Unsat _____***
6. Establish instrument air to containment.	6.1 Verifies containment Iso/Phase A Reset. 6.2 Selects FCV-584 to OPEN. 6.3 Checks instrument air header pressure PI-380 greater than 90 psig. **Step was: Sat: _____ Unsat _____***
7. Establish RCS bleed path.	7.1 Locates PORV block valves, 8000A, 8000B, and 8000C. 7.2 Verifies power available to PORV block valves. 7.3 Verifies PORV block valves are OPEN, 8000A, 8000B, and 8000C, red lights ON. 7.4 Locates PORVs. 7.5 Attempts to open at least two PORVs by taking switches to the OPEN position for PCV-474, PCV-455C, and/or PCV-456. **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

8. ** Verify adequate RCS bleed path.	8.1 Notes at least two PORVs and associated block valves are not open, PCV 474 and 456, red lights OFF.
	Note: Operator notes CAUTION before opening reactor vessel head vents.
	8.2 Locates reactor vessel head vent valves on PAM 1 (8078A, B, C, and D).
	8.3 Opens 8078 A and D.
	8.4 Opens 8078 B and C.
	Step was: Sat: _____ Unsat _____*

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions:	Unit 1 experienced a loss of secondary heat sink. EOP FR-H.1 was implemented and all efforts to establish AFW, MFW, and condensate flow failed.
Initiating Cue:	All steam generator wide range levels are less than 23% and the Shift Foreman directs you to establish RCS heat removal beginning with step 12 of EOP FR-H.1.
Task Standard:	Adequate RCS feed and bleed path is established

- ❑ Type "init ljc116" on the expert screen command line. Click the BYPASS SW CHECK button on the expert screen to continue after control boards are aligned. The snap will work for this JPM also.
- ❑ This SNAP allow entry into EOP FR-H.1 at step 12. Steam generator wide range levels are 22%. Steam generator pressures are at 1000 psig with the 10% steam dumps into AUTO at 8.38 turns.
- ❑ Enter drill file 1122 or manually insert the following:

Command	Description
vlv pzr4 1,0,0,0,d,0 #rrcp455c	PCV-455c fails as is
vlv pzr5 1,0,0,0,d,0 #rrcp456	PCV-456 fails as is
vlv pzr6 1,0,0,0,d,0 #rrcp474	PCV-474 fails as is

- ❑ Perform the following:
  1. Display the E-0 screen on SPDS panel A.
  2. Display the CSF-3 screen on SPDS panel B.
- ❑ Inform the examiner that the simulator setup is complete.
- ❑ Go to RUN when the examinee is given the cue sheet.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJC-23

Title: REMOVE POWER RANGE CHANNEL N42 FROM SERVICE

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: OP AP-5, Malfunction of Protection or Control Channel, Rev. 17

Alternate Path: Yes _____ No X

Time Critical: Yes _____ No X

Time Allotment: 10 minutes

Critical Steps: 2, 3, 4, 5, 6

Job Designation: RO/SRO

KA Number: 15A2.02

Rating: 3.1/3.5

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. After identifying the appropriate procedure for the task, the examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: Unit 1 is at 100% power. A malfunction caused power range channel N42 to fail high. Rod control was placed in MANUAL after rods stepped in five (5) steps. The Shift Foreman has requested Technical Maintenance Services to trip bistables BS421C and BS421D.

Initiating Cue: You have been directed by the Shift Foreman to remove power range channel N42 from service according to OP AP-5, Attachment 4.1. The Shift Foreman has requested the fuses be left in for troubleshooting.

Task Standard: Power range channel N42 is removed from service.

Start Time: _____

Step	Expected Operator Actions
1. Obtain the correct procedure.	1.1 References OP AP-5, Attachment 4.1. 1.2 Locates the actions to be performed for an NI failure. **Note: Operator may review STP I-2C1.** **Step was: Sat: _____ Unsat: _____*** ********** **Cue: If the operator refers to the requirement to use concurrent verification, state that requirement is waived for the purposes of this JPM.** ********** 2.1 Places the rod stop bypass switch to the N42 position. **Note: May verify rod stop bypass (PK07-07) ON.** **Step was: Sat: _____ Unsat: _____***
2. ** Place rod stop bypass switch to N42 position.	
3. ** Place the power mismatch bypass switch to the N42 position.	3.1 Places the power mismatch bypass switch to the N42 position. **Step was: Sat: _____ Unsat: _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

4. ** Place the quadrant power tilt alarm upper section switch to the N42 position.	4.1 Places the quadrant power tilt alarm upper switch to the N42 position. 4.2 Verifies the channel defeat LED ON (not part of critical step). **Step was: Sat: _____ Unsat: _____***
5. ** Place the quadrant power tilt alarm lower section switch to the N42 position.	5.1 Places the quadrant power title alarm lower switch to the N42 position. 5.2 Verifies the channel defeat LED ON (not part of critical step). **Step was: Sat: _____ Unsat: _____***
6. ** Place the comparator defeat switch to the N42 position.	6.1 Places the comparator defeat switch to the N42 position. 6.2 Verifies the comparator defeat LED ON (not part of critical step). **Step was: Sat: _____ Unsat: _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: Unit 1 is at 100% power. A malfunction caused power range channel N42 to fail high. Rod control was placed in MANUAL after rods stepped in five (5) steps. The Shift Foreman has requested Technical Maintenance Services to trip bistables BS421C and BS421D.

Initiating Cue: You have been directed by the Shift Foreman to remove power range channel N42 from service according to OP AP-5, Attachment 4.1. The Shift Foreman has requested the fuses be left in for troubleshooting.

Task Standard: Power range channel N42 is removed from service.

- ☐ Initialize the simulator to IC-1 (100%, BOL).
- ☐ Enter drill file 1051 or manually insert the following:

Command	Description
1. mal nis6b act,200,0,0,d,0	Fails power range channel N42 high
2. run 7	Runs simulator for 7 seconds to allow rods to step in 5 steps.

- ☐ Perform the following:
  1. Place rod control in MANUAL after the simulator goes to FREEZE.
- ☐ Inform the examiner that the simulator setup is complete.
- ☐ Go to RUN when the examinee is given the cue sheet.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJP-15

Title: PERFORM A LOCAL START OF A DIESEL GENERATOR

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: Unit 2 OP AP-8A, Control Room Inaccessibility, Establishing Hot Standby, Rev. 11

Alternate Path: Yes X No _____

Time Critical: Yes _____ No X

Time Allotment: 10 minutes

Critical Steps: 1, 2, 3, 4, 6, 7, 8

Job Designation: RO/SRO

KA Number: 064A4.01

Rating: 4.0/4.3

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. The examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: A fire in the vertical boards has required an evacuation of the control room. Plant control has been established from the Hot Shutdown Panel.

Initiating Cue: The Shift Foreman directs you to establish local control and start diesel generator 23 in accordance with OP AP-8A, Appendix B, Step 6.

Task Standard: Diesel generator 23 is running.

Start Time: _____

Step	Expected Operator Actions
1. ** Place the droop switch on the excitation cubicle to the ISOC mode.	1.1 Reads and observes procedure NOTE prior to Step 6.a (not part of critical step). 1.2 Locates the diesel generator 23 droop switch on the excitation cubicle. 1.3 Places the droop switch to the ISOC position. **Step was: Sat: _____ Unsat: _____***
2. ** Verify the AUTO/TEST selector switch on the local control panel is in the TEST position.	2.1 Locates the AUTO/TEST selector switch on the diesel generator 23 local control panel. 2.2 Places the AUTO/TEST selector switch to the TEST position. **Step was: Sat: _____ Unsat: _____***
3. ** Place the diesel generator control selection switch on the excitation cubicle to the LOCAL position.	3.1 Locates the diesel generator 23 control selection switch on the excitation cubicle. 3.2 Places the diesel generator 23 control selection switch to the LOCAL position. **Step was: Sat: _____ Unsat: _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

4. ** Place the Appendix R fuse selector switch 43DC-23 to the BACKUP position.	4.1 Locates the 43DC-23 switch on the diesel generator 23 local control panel. 4.2 Places the Appendix R fuse selector switch to the backup position. **Step was: Sat: _____ Unsat: _____***
5. Depress the alarm relay reset push button.	5.1 Locates the alarm relay reset push button on diesel generator 23 local control panel. 5.2 Depresses the alarm relay reset push button. **Step was: Sat: _____ Unsat: _____***
6. ** Place the START/STOP switch on the local control panel to the START position.	6.1 Locates the START/STOP switch at the diesel generator 23 local control panel. 6.2 Places the START/STOP switch to the START position. ********** **Cue: The diesel generator did not start.** ********** **Step was: Sat: _____ Unsat: _____***
7. ** Place 125 VDC Control Power Transfer Switch (EQD 23) to its Backup position	7.1 Locates CPTS EQD23 and places switch in Backup position

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

8. ** Place the START/STOP switch on local control panel to the START position	8.1 Places the START/STOP switch to the START position

Cue: The diesel generator is running with normal operating parameters.

Step was: Sat:_____ Unsat:_____*

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions: A fire in the vertical boards has required an evacuation of the control room. Plant control has been established from the Hot Shutdown Panel.

Initiating Cue: The Shift Foreman directs you to establish local control and start diesel generator 23 in accordance with OP AP-8A, Appendix B, Step 6.

Task Standard: Diesel generator 23 is running.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJP-16

Title: CLOSE AN MSIV LOCALLY

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: Unit 2 EOP E-2, Faulted Steam Generator Isolation, Appendix L, Rev 8A

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 10 minutes

Critical Steps: 1, 2, 3

Job Designation: RO/SRO

KA Number: 040AA1.03

Rating: 4.3/4.3

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. The examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: A main steam line rupture occurred on Unit 2 outside containment and downstream of the MSIVs. Automatic isolation from ESF actuation and manual attempts to close MSIV FCV-43 from VB-3 were unsuccessful. FCV-43 bypass valve, FCV-23 is closed.

Initiating Cue: The Shift Foreman directs you to locally close MSIV FCV-43 in accordance with Appendix L of EOP E-2 and gives you an eight inch crescent wrench and cutters.

Task Standard: Unit 2 MSIV FCV-43 is closed.

Start Time: _____

Step	Expected Operator Actions
1. ** Locally close MSIV air supply or common air supply valves.	1.1 Operator locates and closes common air supply valve AIR-I-2-1044 or MSIV air supply valve AIR-I-2-4027. **Step was: Sat: _____ Unsat _____***
2. ** Remove accumulator 3/4 inch drain caps.	2.1 Operator locates and removes 3/4 inch drain caps. **Step was: Sat: _____ Unsat _____***
3. ** Open MSIV air accumulator drain valves.	3.1 Operator locates and opens drain valves AIR-I-2-1547 and 1548. **Step was: Sat: _____ Unsat _____***
4. Check FCV-43 closed.	4.1 Operator checks FCV-43 position. ********** **Cue: FCV-43 is closed.** ********** 4.2 Notifies the Control Operator that FCV-43 is closed. ********** **Cue: The control room is notified.** ********** **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions:	A main steam line rupture occurred on Unit 2 outside containment and downstream of the MSIVs. Automatic isolation from ESF actuation and manual attempts to close MSIV FCV-43 from VB-3 were unsuccessful. FCV-43 bypass valve, FCV-23 is closed.
Initiating Cue:	The Shift Foreman directs you to locally close MSIV FCV-43 in accordance with Appendix L of EOP E-2 and gives you an eight inch crescent wrench and cutters.
Task Standard:	Unit 2 MSIV FCV-43 is closed.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJP-17

Title: Isolate a Ruptured LHUT

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: OP AP-14, Tank Ruptures, Rev. 7B

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 15 Minutes

Critical Steps: 1, 2, 3

Job Designation: RO/SRO

Task Number: 068A4.02

Rating: 3.2/3.1

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: N/A
JPM COORDINATOR

APPROVED BY: N/A DATE: N/A
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. The examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: PK 64-15 , LHUT 1-1 Lvl Lo and PK 64-31, Unit 1 LHUT Press Lo are in alarm due to a Liquid Holdup Tank (LHUT) rupture. LHUT 1-1 is aligned to receive diverted CVCS and aligned to the Waste Gas System for cover gas. GDT 1-1 is on purge.

Initiating Cue: You are directed by the Unit 1 Shift Foreman to isolate LHUT 1-1, per OP AP-14, step 8f.

Task Standard: Ruptured LHUT is isolated.

Start Time: _____

Step	Expected Operator Actions
1. **Close Ruptured LHUT Inlet valve.	1.1 Operator selects closed position on FCV-5, LHUT 1-1 inlet valve control switch
	Note: FCV-5 control switch is located at the Aux. Control board.
	1.2 Operator verifies FCV-5 is closed using green light on and red light off above control switch. **Step was: Sat: _____ Unsat _____***
2. ** Close Gas Decay Tank Purge Valve.	2.1 Operator selects closed position on FCV-407, GDT 1-1 purge valve.
	Note: FCV-407 control switch is located at the Aux. Control board.
	2.2 Operator verifies FCV-407 is closed using green light on and red light off above control switch. **Step was: Sat: _____ Unsat _____***
3. **Isolate Nitrogen Supply to LHUTs	3.1 Operator manually closes CVCS-8264, N_2 Supply to Waste Gas Compressors. 3.2 Operator manually closes N_2-1-41, N_2 supply to LHUTs **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions:	PK 64-15 , LHUT 1-1 Lvl Lo and PK 64-31, Unit 1 LHUT Press Lo are in alarm due to a Liquid Holdup Tank (LHUT) rupture. LHUT 1-1 is aligned to receive diverted CVCS and aligned to the Waste Gas System for cover gas. GDT 1-1 is on purge.
Initiating Cue:	You are directed by the Unit 1 Shift Foreman to isolate LHUT 1-1, per OP AP-14, step 8f.
Task Standard:	Ruptured LHUT is isolated.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJP-19

Title: ALIGN VITAL 480V BUSES FOR CONTROL FROM THE HOT SHUTDOWN PANEL

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: OP AP-8A, Control Room Inaccessibility - Establishing Hot Standby, Rev. 13

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 20 minutes

Critical Steps: 1, 3

Job Designation: RO/SRO

KA Number: 068AA1.21

Rating: 3.9/4.1

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. The examinee may be given the procedure and told the step with which to begin.

Required Materials: None

Initial Conditions: A fire in the Unit 1 Control Room has caused a Control Room evacuation. OP AP-8A is being performed and the operating crew is ready to align all 480 VAC loads for control from the Hot Shutdown Panel.

Initiating Cue: The Shift Foreman directs you to perform steps 1-3 in Appendix F of OP AP-8A.

Task Standard: Vital 480V bus alignment is completed in accordance with OP AP-8A, Appendix F steps 1-3.

Start Time: _____

Step	Expected Operator Actions
1. ** Place the control transfer cutout switches for 480V vital bus F to the CUT-IN position.	1.1 Locates the 480V vital bus F aux relay panel.
	Note: CUT IN / CUT OUTs are inside panel.
	1.2 Places containment fan cooler CFCU 12 switch 43X-1F-1 to the CUT-IN position.
	1.3 Places letdown orifice valve 8149B switch 43BX to the CUT-IN position.
	Step was: Sat: _____ Unsat _____*
2. Open 480V vital bus F breakers to prevent spurious operation.	2.1 Opens FCV-430 breaker 52-1F-11.
	2.2 Opens LCV-112B breaker 52-1F-12.
	2.3 Opens valve 8805A breaker 52-1F-19.
	2.4 Opens FCV-750 breaker 52-1F-23.
	Step was: Sat: _____ Unsat _____*

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

3. ** Place the control transfer cutout switches for 480V vital bus G to the CUT-IN position.

3.1 Locates 480V vital bus G aux relay panel.

3.2 Places containment fan cooler CFCU 15 switch 43X-1G-2 to the CUT-IN position.

3.3 Places BA transfer pump 2 switch 43X-1G-4 to the CUT-IN position.

3.4 Places AFW pump 1 FCV-95 switch 43X-12-30 to the CUT-IN position.

3.5 Places LCV-106 switch 43X-1G-44 to the CUT-IN position.

3.6 Places the emergency borate valve 8104 switch 43X-1G-57 to the CUT-IN position.

3.7 Places LCV-107 switch 43X-1G-68 to the CUT-IN position.

Note: These switches are inside the relay panel.

Step was: Sat: _____ Unsat _____*

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

4. Open 480V vital bus G breakers to prevent spurious operation.	4.1 Opens LCV-112C breaker 52-1G-11.
	4.2 Opens valve 8805B breaker 52-1G-14.
	4.3 Opens FCV-363 breaker 52-1G-23.
	4.4 Opens FCV-431 breaker 52-1G-28.
	4.5 Opens FCV-356 breaker 52-1G-36.
	4.6 Opens valve 9003A breaker 52-1G-48.
	4.7 Opens valve 8982A breaker 52-1G-58.
	Step was: Sat: _____ Unsat _____*
5. Open 480V vital bus H breakers to prevent spurious operation.	5.1 Opens valve 9003B breaker 52-1H-06.
	5.2 Opens valve 8982B breaker 52-1H-12.
	5.3 Opens FCV-355 breaker 52-1H-16.
	5.4 Opens FCV-357 breaker 52-1H-17.
	5.5 Opens FCV-749 breaker 52-1H-18.
	Step was: Sat: _____ Unsat _____*

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions:	A fire in the Unit 1 Control Room has caused a Control Room evacuation. OP AP-8A is being performed and the operating crew is ready to align all 480 VAC loads for control from the Hot Shutdown Panel.
Initiating Cue:	The Shift Foreman directs you to perform steps 1-3 in Appendix F of OP AP-8A.
Task Standard:	Vital 480V bus alignment is completed in accordance with OP AP-8A, Appendix F steps 1-3.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJP-20

Title: RESET THE TURBINE DRIVEN AUX FEEDWATER PUMP

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments:

References: OP D-1:IV, Steam-Driven Auxiliary Feed Pump - Restart or Make Available After Overspeed Trip, Rev. 14

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 10 minutes

Critical Steps: 2, 3, 4, 5

Job Designation: RO/SRO

KA Number: 061A2.04

Rating: 3.4/3.8

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

REV. 0

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. The examinee may be given the procedure and told the step with which to begin.

Required Materials: Flashlight

Initial Conditions: Unit 1 tripped from 100% power. All four steam generator narrow range levels are below 4%. AFW pump 11 tripped on overspeed and is needed for plant cooldown.

Initiating Cue: The Shift Foreman directs you to restart AFW pump 11, per OP D-1:IV.

Task Standard: AFW pump 11 is running with the trip throttle valve reset.

Start Time: _____

Step	Expected Operator Actions
1. Verify that the speed setting knob on the turbine governor MS-1-FCV-15 is positioned to the maximum speed setting (fully clockwise).	1.1 Verifies the knob is positioned to the maximum setting. **Step was: Sat: _____ Unsat _____***
2. ** Turn the turbine throttle trip valve MS-1-FCV-152 handwheel in the clockwise direction until the spring is fully compressed.	2.1 Turns FCV-152 in the clockwise direction until the spring is fully compressed. **Step was: Sat: _____ Unsat _____***
3. ** Latch up the latching lever by means of the trip hook.	3.1 Latches up the lever by fully depressing the latch plate into the latching mechanism. **Step was: Sat: _____ Unsat _____***
4. ** Verify the trip mechanism has been reset.	4.1 Verifies the latch plate is properly seated by visual inspection and comparing its position with Attachment 9.1. **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

5. ** Open MS-1-FCV-152 fully by turning the handwheel in the counter clockwise direction.	5.1 Turns the handwheel in the counter clockwise direction until the FCV-152 is fully open. ********** **Cue: Turbine speed is increasing as FCV-152 is manually opened.** ********** ********** **Cue: FCV-152 is fully open and the turbine did not trip.** ********** **Step was: Sat: _____ Unsat _____***
6. Check that the Governor is controlling speed properly.	6.1 Locates the local RPM indication to verify the turbine is at full speed. **OR** 6.2 Contacts the control room to verify turbine full speed is being maintained by the governor. ********** **Cue: Turbine speed indicates approximately 4200 RPM.** ********** **Step was: Sat: _____ Unsat _____***

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions:	Unit 1 tripped from 100% power. All four steam generator narrow range levels are below 4%. AFW pump 11 tripped on overspeed and is needed for plant cooldown.
Initiating Cue:	The Shift Foreman directs you to restart AFW pump 11, per OP D-1:IV.
Task Standard:	AFW pump 11 is running with the trip throttle valve reset.

NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT

JOB PERFORMANCE MEASURE

Number: NRCLJP-21

Title: ALIGN ALTERNATE AFW FROM THE FIRE WATER STORAGE TANK

Examinee: _____

Evaluator: _____ _____ _____
Print Signature Date

Results: Sat _____ Unsat _____ Total Time: _____ minutes

Comments: Requires PG&E "909" Key

References: OP D-1:V, Auxiliary Feedwater System - Alternate Auxiliary Feedwater Supplies, Rev. 13

Alternate Path: Yes _____ No ___X___

Time Critical: Yes _____ No ___X___

Time Allotment: 20 minutes

Critical Steps: 2, 3, 7

Job Designation: RO/SRO

KA Number: 061A1.04

Rating: 3.9/3.9

AUTHOR: JACK BLACKWELL DATE: 2/13/2003

REVIEWED BY: N/A DATE: _____
JPM COORDINATOR

APPROVED BY: N/A DATE: _____
TRAINING LEADER

Directions: **No plant controls or equipment are to be operated during the performance of this Job Performance Measure**. All actions taken by the examinee should be clearly demonstrated and verbalized to the evaluator. The student will be given the initial conditions, initiating cue, and task standard. The examiner will then ask if any clarifications are needed. The examinee may be given the procedure and told the step with which to begin.

Required Materials: PG&E "909" key. The operator must have a "909" key in possession or be able to obtain one.

Initial Conditions: The Unit 1 AFW pumps are supplied from the raw water reservoir due to the CST being less than 10%. A seismic event occurs with a resultant loss of AFW.

Initiating Cue: The Shift Foreman directs you to line up the next preferred water source to the AFW system and vent the pumps per OP D-1:V.

Task Standard: AFW pump suction is supplied from the desired source and the pumps are vented.

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Start Time: _____

Step	Expected Operator Actions
1. Check open FP-0-4.	1.1 Locates FP-0-4 in the FWST vault. 1.2 Checks valve open. **Step was: Sat: _____ Unsat _____***
2. ** Open FP-0-306 and FP-0-307.	2.1 Locates FP-0-306 and 307, located above the MU water pumps. **Note: These valves are normally chained and locked closed.** 2.2 Unlocks and opens the valves. **Step was: Sat: _____ Unsat _____***
3. ** Close MU-0-1557.	3.1 Locates MU-0-1557 in the overhead by the RWST vault, 100' elevation. 3.2 Closes MU-0-1557. **Step was: Sat: _____ Unsat _____***
4. Check open FCV-436 and 437.	4.1 Locates FCV-436 and 437 in AFW pump room 11, 100' elevation. 4.2 Open FCV-436 and 437. **Note: FCV-436 and 437 would be open already based on the initial conditions given in the JPM.** ********** **Cue: Valves are open.** ********** **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

5. Notify control room of alignment.	5.1 Calls control room and informs them of alignment. ********** **Cue: You are to continue with next step.** ********** **Step was: Sat: _____ Unsat _____***
6. Close the AFW PP suctions from the CST.	6.1 Locates AFW Pump suctions from the CST: AFW pp11 - FW-1-121 AFW pp12 - FW-1-159 AFW pp13 - FW-1-180 6.2 Closes AFW pp suctions from CST. **Note: FW-1-121, 159, 180 would already be closed based on initial conditions given in the JPM.** **Step was: Sat: _____ Unsat _____***
7. ** Vent the AFW pumps to remove trapped air.	7.1 Locates the AFW pump vents: AFW pp11 - FW-1-127 - FW-1-128 AFW pp12 - FW-1-165 AFW pp13 - FW-1-186 by their associated pumps. 7.2 Removes vent caps and opens vent valves to vent pumps until trapped air is removed. ********** **Cue: The pumps are vented.** ********** 7.3 Shuts vent valves and replaces vent caps. **Step was: Sat: _____ Unsat _____***

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Stop Time: _____

Total Time: _____ (Enter total time on the cover page)

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.

Initial Conditions:	The Unit 1 AFW pumps are supplied from the raw water reservoir due to the CST being less than 10%. A seismic event occurs with a resultant loss of AFW.
Initiating Cue:	The Shift Foreman directs you to line up the next preferred water source to the AFW system and vent the pumps per OP D-1:V.
Task Standard:	AFW pump suction is supplied from the desired source and the pumps are vented.

*Denotes an entry required on the JPM cover sheet.
**Denotes a Critical Step.