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August 10, 1994

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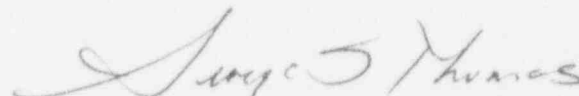
**Subject: Beaver Valley Power Station, Unit No. 2  
Docket No. 50-412, License No. NPF-73  
Report of Facility Changes, Tests, and Experiments**

In accordance with 10 CFR 50.59, the Annual Report of Facility Changes, Tests, and Experiments for the Beaver Valley Power Station, Unit No. 2, is attached. This report provides a brief description of each facility or procedure change. The annual report covers the period of November 1, 1992, through October 31, 1993.

Each change was evaluated to determine (1) if the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the Updated Final Safety Analysis Report may be increased, or (2) if a possibility for an accident or malfunction of a different type than any evaluated previously in the Updated Final Safety Analysis Report may be created, or (3) if the margin of safety as defined in the basis for any technical specification is reduced. In each case, it was determined that the change did not involve an unreviewed safety question.

If you have any questions regarding this report, please contact Nelson R. Tonet at (412) 393-5210.

Sincerely,



George S. Thomas

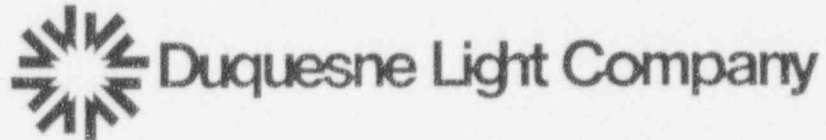
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cc: Mr. L. W. Rossbach, Sr. Resident Inspector  
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BEAVER VALLEY POWER STATION  
UNIT NO. 2

DOCKET NO. 50-412  
LICENSE NO. NPF-73

## **ATTACHMENT 1**

1993 REPORT OF FACILITY CHANGES,  
TESTS, AND EXPERIMENTS  
NOVEMBER 1, 1992 - OCTOBER 31, 1993

Beaver Valley Power Station Unit 2  
1994 Report of Facility Changes, Tests, and Experiments  
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CHANGE TITLE

Operating Procedure Change in 2OM-36.4.ADI, Local - RSVR #1 Starting Air Press Low

CHANGE DESCRIPTION

The procedure which addresses actions to be taken on the loss of Emergency Diesel Generator Air Starting System Air Dryers [EGA-DRY21A or 21B] has been modified. The procedure allowed bypassing the dryers up to 14 days for maintenance. This revision will allow bypassing for up to 60 days.

CHANGE TITLE

EOP Changes to Identify Failure of an Alternate Miniflow Relief Valve

CHANGE DESCRIPTION

NRC Information Notice 92-61 and INPO SER 20-91 identified problems with the Alternate Minimum Flow relief valves of the HHSL pumps which could fail to close and divert a significant amount of SI flow away from the Reactor Coolant System (RCS) to the Refueling Water Storage Tank (RWST). To address this concern, two changes have been made. First, an Emergency Operating Procedure (EOP) revision has been made to have an operator close the Alternate Miniflow Isolation Valve [2CHS\*MOV383A, B] if a relief valve failure is indicated. The second change was a Temporary Modification which removed the interlock between 2CHS\*MOV383A, B and Alternate Miniflow Isolation Valve [2CHS\*MOV380A, B]. This will allow reopening the relief path should the RCS pressure and High Head Safety Injection pressure exceed 2000 psig.

CHANGE TITLE

NSA Position Change of the Pressurizer Backup Heaters 2D and 2E

CHANGE DESCRIPTION

The Normal System Arrangement (NSA) position of two pressurizer heater backup groups, 2D and 2E, has been changed from the automatic position to the PULL-TO-LOCK position. During a review of station service voltage and load analysis, it was noted that the backup heaters, powered from Class 1E 480 volts busses 8N and 9P are assumed to be off during a Containment Isolation, Phase B (CIB). During certain accident conditions with the heaters in automatic, it is possible that supply breaker current may exceed the 8N breaker trip setting thus causing the breaker to trip.

CHANGE TITLE

2TOP-93-01, Pressurizing AFW Piping With Demineralized Water

CHANGE DESCRIPTION

A temporary procedure was developed to repressurize a train of Auxiliary Feedwater (AFW) System piping to eliminate any steam voids at the containment AFW check valves. A temporary hose from the demineralized water header (in the Recirculation Spray Heat Exchanger [2RSS\*E21C] Cubicle) is connected to the affected AFW piping test connection drain valve. The demineralized water is then used to repressurize the isolated AFW piping.

CHANGE TITLE

Temporary Gag on Discharge Relief for Heater Drain Pump

CHANGE DESCRIPTION

Heater Drain Pump 21B Discharge Relief Valve [2HDH-RV106B] was temporarily gagged to prevent it from leaking back to the condenser during power operation. 2HDH-RV106B does not seat properly causing a steady state leakby.

CHANGE TITLE

Operating Procedure Change in ES-1.4, Transfer to Hot Leg Recirculation

CHANGE DESCRIPTION

Emergency Operating Procedure ES-1.4 was changed to provide specific instructions to restore Recirculation Spray Pump discharge flow to the cold leg recirculation flow path if flow cannot be switched to the hot leg flow path due to failure of the Low Head Safety Injection Pump Combined Discharge to Hot Legs Isolation Valve [2SIS\*MOV8889]. The potential failure of 2SIS\*MOV8889 had been identified in a 10 CFR 21.21 report.



CHANGE TITLE

Evaluation of Excessive Stroke Time for Steam Generator [2RCS\*SG21C] Inside Containment Blowdown Isolation Valve [2BDG\*AOV101C1]

CHANGE DESCRIPTION

In a recent performance of 2OST-47.3A, Containment Penetration and ASME Section XI Valve Test, the "C" Steam Generator [2RCS\*SG21C] Inside Containment Blowdown Isolation Valve [2BDG\*AOV101C1] stroke time was 15.27 seconds, which is .27 seconds in excess of UFSAR Section 3.6B1.3.4.3 stroke requirements. An evaluation was performed to determine that the increase in isolation time does not adversely impact the existing background analyses from which the UFSAR statements were derived until the valve is repaired.

CHANGE TITLE

NSA Change for Rocker Arm Lube Oil Reservoir Fill Isolation Valve [2EGO-261]

CHANGE DESCRIPTION

Rocker Arm Reservoir Normal Makeup Valve [2EGO-23] failed to completely close. This situation created the potential for a loss of oil from the diesel lube oil system reservoir and a fire hazard. To maintain the Diesel Generator operable, Rocker Arm Lube Oil Reservoir Fill Isolation Valve [2EGO-261] normal system arrangement position was changed from open to closed. The valve is manually opened for makeup as needed.

CHANGE TITLE

New Operating Procedure 2OM-47.4.E, Defeating Containment Air Lock Door Interlocks

CHANGE DESCRIPTION

A new procedure, 2OM-47.4.E, Defeating Containment Air Lock Door Interlocks, was developed to provide instructions for defeating interlocks for either or both the Personnel Air Lock or the Emergency Air Lock to allow both doors of the air lock to be opened at the same time during a maintenance outage. Both doors are opened to facilitate access when Containment Integrity is not required.



CHANGE TITLE

Temporary Modification of Condensate Polishing Air Compressor TCV Bypass Valve

CHANGE DESCRIPTION

The skid mounted component cooling temperature control valve bypass valve of the Condensate Polishing Air Compressor [2SAS-C22] has failed. To temporarily restore the compressor to service, the bypass valve internals were removed, the stem was cut and the stem and bonnet were brazed to seal the valve body. This temporary modification will cause full bypass flow to the compressor with the exception of the after coolers.

CHANGE TITLE

2TOP-93-05, Diesel Generator Fuel Oil Processing with Emergency Diesel Generator Operable

CHANGE DESCRIPTION

A new temporary procedure, 2TOP-93-05, Diesel Generator Fuel Oil Processing with Emergency Diesel Generator Operable, was generated to provide instructions for the installation, use and removal of a temporary fuel oil processing skid. This will allow the processing of fuel oil contained in one fuel oil storage tank while maintaining the affected Diesel Generator Operable.

CHANGE TITLE

2OM-6.4.C, Draining An Isolated Reactor Coolant Loop

CHANGE DESCRIPTION

Procedure 2OM-6.4.C, Draining An Isolated Reactor Coolant Loop, was revised to supply nitrogen gas to the isolated RCS loop(s) vent valve during loop draining. The nitrogen will displace the drained water, preventing oxygen from entering the isolated loop(s) and causing a combustible mixture.

CHANGE TITLE

Change to NSA Position of Steam Line Drain Valves [2SDS-212 and 213]

CHANGE DESCRIPTION

Steam Line Drain Valves [2SDS-212 and 213] are located on each side of the turbine driven Auxiliary Feedwater Pump Throttle Valve. Their normally throttled position allowed accumulated moisture to be routed to a drain. The normal position of these valves has been changed to closed for the purpose of eliminating unnecessary steam admission to the Auxiliary Feedwater Pump area.

CHANGE TITLE

NSA Change for Demineralized Water to Recirculation Pump Isolation Valve [2RSS-37]

CHANGE DESCRIPTION

During the Fourth Refueling Outage, large volumes of water were found in several Recirculation Spray Pump casings. To prevent demineralized water from filling the casings, the Demineralized Water to Recirculation Pump Isolation Valve [2RSS-37] will be closed to provide double isolation.

CHANGE TITLE

2RP-4R-2.10, Refueling Procedure - Reactor Vessel Stud Installation, Remove Guide Studs and Stud Hole Plugs

CHANGE DESCRIPTION

Reactor vessel stud 51 is stuck due to a possible burr or grease build-up. To prevent further stud damage, the refueling procedure is being modified so that the stud will not be removed during Refueling Operations.

#### CHANGE TITLE

2RP-4R-2.6, Refueling Procedure - Remove Reactor Vessel Studs/Clean

#### CHANGE DESCRIPTION

Reactor Vessel Stud 51 was found to be bound and could not be removed from the Reactor Vessel without permanently damaging the threads within the stud hole. To allow refueling to continue during the Fourth Refueling Outage, a protective stud enclosure was secured over stud 51 to protect the stud from boric acid. This required a change to Refueling Procedure 2RP-4R-2.6.

#### CHANGE TITLE

DCP-1016, Gas Sampling of Boron Recovery System Degasifier Trim Coolers

#### CHANGE DESCRIPTION

The Boron Recovery System (BRS) degasifiers and related equipment are used to reduce the concentration of dissolved and entrained gases in the reactor coolant system. When samples are taken, they are collected from the gaseous effluent of Vent Chillers [2BRS-E23A & B] via Sample and Nitrogen Purge Valves [2GWS-501 & 502]. These valves are located near the ceiling inside the shielded degasifier cubicles in hard-to-reach locations. The cubicles are high radiation areas. A method of obtaining gaseous samples that would reduce personnel exposure was desired.

This modification extended a 1/2" line from each of the current sample points to the walkway areas leading into the cubicles. A new "sample isolation valve" and a quick disconnect fitting was installed at the outer ends of each new line. A second parallel 1/2" line, also with a quick disconnect at the outer end, was run from each new sample point back into the cubicle to be used as a sample purge line. Since the existing valves remained undisturbed, this modification was performed during normal plant operation. The installation was performed in a radiologically controlled area and was done in accordance with the Health Physics and Operations Departments' procedures and recommendations.

By moving the sample points to a more easily accessible area outside of the cubicle wall, the gaseous samples can be obtained more quickly and without the need for personnel to enter the high radiation areas of the degasifier cubicles. This reduces personnel exposure during sample collection utilizing ALARA (As Low as Reasonably Achievable) principles.

The gas sampling procedure currently used in the Chemistry Manual, Chapter 3.2, remains essentially the same except that the Tygon tubing now used to supply and purge the sample bottle was replaced with permanent tubing. Hydrogen accumulation in the cubicle has not been a problem to date and will be even less of a factor now that the purge line is routed directly to the overhead return air register.

#### CHANGE TITLE

DCP-1032, Steam Generator Blowdown Evaporator Level Indicators [2SGC-LI109A, LI109B]  
Faceplate Change

#### CHANGE DESCRIPTION

The Steam Generator Blowdown Evaporator Level Indicators [SGC-LI109A, B] were equipped with a faceplate range of 0 to 72 inches.

The purpose of this modification was to replace the existing faceplate with a new faceplate which has a scale of 128 inches to 200 inches. This provides a consistent reading with the associated level recorder [2SGC-UR108A, B].

#### CHANGE TITLE

DCP-1053, Rev. 1 Steam Generator Feed Pump Recirculation Protection

#### CHANGE DESCRIPTION

Main feedwater pump recirculation valves [2FWR-FCV150A and 2FWR-FCV150B] remain closed following a reactor trip from elevated power levels (i.e., two [2] feedwater pumps in operation, no feedwater isolation signal). Since the main feedwater regulating valves modulate closed following the reactor trip, and the bypass valves are only partially open (approximately 10% in "manual"), a severely reduced flow condition exists for the main feedwater pumps in the two-pump-running configuration. To resolve this problem on past occasions, operators have tripped one (1) or both main feedwater pumps following a reactor trip. This is not a practical long term solution because feedwater pumps are not normally among the higher priority items during reactor trip/accident situations. Circumstances may arise in which tripping the main feedwater pumps may be delayed.

To provide a long term solution, the Feedwater Pump Recirculation Valve [2FWR-FCV150A, B] logic was modified to allow the recirculation valves to open when both pumps are running and a severe low suction flow condition exists for both pumps. Interlocks from feedwater pump suction flow indicating switches [2CNM-FIS152A, B] were wired into the existing recirculation valve logic circuit to permit opening of 2FWR-FCV150A, B when suction flow to both Steam Generator Feed Pumps [2FWS-P21A, B] is less than 6000 GPM.

The recirculation valve logic circuitry was modified to include a time delay for the opening of the recirculation valve to allow suction flow to the running pump to increase above 8000 GPM. If the flow to the running pump does not increase sufficiently prior to the expiration of the time delay, the recirculation valves [2FWR-FCV150A, B] will open.

The additional low-low flow setpoint (6000 GPM) was provided by recalibration of the existing flow switches [2CNM-FIS152A, B]. The flow switches each have two (2) independently adjustable switches which can be set to actuate over the range of the instrument (0-15000 GPM). Both switches were set for a flow rate of 8000 GPM. One (1) of the switches was reset to provide the 6000 GPM setpoint. The second switch will remain set at 8000 GPM and will be used in conjunction with an existing relay in Panel 274 to provide the required functions.

#### CHANGE TITLE

DCP-1112, Rev. 1 Additional Pipe Support for Separator Drain Receiver Drain Pump Piping [2CNM-750-110-4]

#### CHANGE DESCRIPTION

A modification to add a pipe support between a 3/4" pipe and a 6" pipe of the condensate system eliminated excessive vibration of the 3/4" pipe which supplies seal water to the Separator Drain Receiver Drain Pumps [2HDD-P22A, B].

#### CHANGE TITLE

DCP-1114, Remotely Stored Nitrogen Supply For Feedwater Isolation Valves

#### CHANGE DESCRIPTION

Feedwater Isolation Valves [2FWS-HYV157A, B, and C] are equipped with a pneumatic-hydraulic operator which closes the valve by discharging an integral nitrogen reservoir. The valve opening is accomplished using a motor and pump to provide hydraulic pressure to the operator. To facilitate recharging of the nitrogen reservoir, bulk nitrogen bottles must be transported up and down the stairways from the storeroom to the Main Steam Valve Room. The process involves a personnel safety hazard and is time-consuming.

The purpose of this modification was to install a nitrogen bottle station which consists of a double capacity storage rack, restraining clamp, and metal roof at the courtyard east of the cable vault. Installation also included routing of stainless tubing (to the Main Steam Valve Room), isolation valves, pressure regulators, relief valves, and a flexible hose connected to the feedwater isolation valves. This supply line is not pressurized under normal operations.

#### CHANGE TITLE

DCP-1149, Replacement of Various Pressure Gauges

#### CHANGE DESCRIPTION

Hot water heating demineralized water fill line local pressure indicator, [2HVVH-PI604A], (0-100 psig) was replaced with a wider range gauge (0-160 psig) to accommodate higher than expected system pressure. This gauge is located in the Turbine Building and indicates pressure of the demineralized water make-up supply to the Hot Water Heating (HVH) system.

Local fuel pool cooling pump suction pressure gauges, [2FNC-PI100A, B], (0-160 psig) was replaced with narrower range gauges (0-60 psig) to provide better readability and accuracy. These gauges are located in the Fuel Building.

Local condenser tube cleaning system ball recirculation pumps, [2CWA-P22A, B, C and D], discharge pressure gauges, [2CWA-PI103A, B, C and D] was replaced with a liquid filled model which is sturdier and can tolerate vibration. These gauges are located in the Turbine Building.

Temporary gland steam condenser pressure gauge, [2CNM-PI219A], (0-30 in Hg) became permanent. This gauge is conveniently located in the Turbine Building Mezzanine near the throttle control valve of the gland steam condenser. This design change also makes permanent the instrument tubing and supports which connect this gauge to the instrument tubing of the existing gauge, [2CNM-PI219]. The existing gauge is located on the Turbine Deck and is not convenient for controlling gland steam condenser pressure.

#### CHANGE TITLE

DCP-1215, Motor Control Transformer Fuse Protection

#### CHANGE DESCRIPTION

The 480 VAC Motor Control Centers (MCCs) cubicles have, as an integral part of their assembly, a control transformer to supply control power. Overloads and short circuits on the secondary side of these transformers (due to pinched wires, jammed starters, SOV grounds, etc.) have damaged several of these transformers, which have proven to be very costly to replace. The proposed solution added fuses to the control transformer secondary.

Changes were required at the secondary side of all control transformers located within the cubicles of the BVPS-2 non-1E MCCs. All work was performed at the cubicles of the following MCCs:

MCC-2-01	MCC-2-11	MCC-2-20
MCC-2-02	MCC-2-13	MCC-2-21
MCC-2-03	MCC-2-14	MCC-2-22
MCC-2-04	MCC-2-15	MCC-2-23
MCC-2-05	MCC-2-16	MCC-2-24
MCC-2-06	MCC-2-17	MCC-2-25
MCC-2-07-1	MCC-2-17S	MCC-2-26
MCC-2-07-2	MCC-2-18	MCC-2-27
MCC-2-08	MCC-2-19-1	MCC-2-28
MCC-2-09	MCC-2-19-2	MCC-2-29
MCC-2-10		

#### CHANGE TITLE

DCP-1374, Bracing for Conduit Support 5096-S

#### CHANGE DESCRIPTION

Bracing members were installed on Category 1 raceway support 5096-S. During the drawing/calculation reconciliation effort it was discovered one of the calculation requirements for this conduit support had not been put into effect. This change package was required to complete the installation of support 5096-S.

#### CHANGE TITLE

DCP-1425, Safety Improvements

#### CHANGE DESCRIPTION

For safety reasons (Personnel Hazards and OSHA Compliance), design modifications were planned in several Unit 2 locations as shown below.

The Safeguards building has 30" - 35" concrete platforms on its northern and southern perimeter. Access to such platforms is by 3-rung ladders (three on the south side and one on the north). These ladders cause accidents and were replaced by stairs.



The fuel building has portions of concrete over the fuel pool (between transfer canal and spent fuel) which require personnel access. Provision of safety lines is essential, and such provision was made by installing small posts (approximately 15" high, thus not exceeding the depth available below the crane platform) with base plates hilti-anchored to the concrete so that rails with sliding sleeves and lanyards can be installed on such posts. The lanyards will secure the personnel working on the concrete section.

A ladder in the South end of the Waste Handling Building at El. 735'-6" had inadequate clearance for climbers. This condition was corrected by moving the ladder to the northwest corner of the nearby upper platform (El. 752'-6").

A temporary ladder was being used to access the Condenser pit in the area between 2CWS-MOV-100C and 100D. Climbing over a handrail to use the ladder was awkward. A permanent ladder was installed in this area.

#### CHANGE TITLE

DCP-1479, Rev. 1 Modify Pipe Support on Line No. 2-DGV-750-064-4 To Eliminate Pipe Vibration

#### CHANGE DESCRIPTION

This change modifies an existing pipe support on Feedwater Heater Steam Inlet Valve [2MSS-009] Stem Leak Off Line No. 2-DGV-750-64-4 by welding four bars on the support to eliminate excessive vibration of the pipe.

#### CHANGE TITLE

DCP-1542, Manipulator Crane Load Cell Replacement

#### CHANGE DESCRIPTION

During the fourth refueling outage, the existing Dillon load cell and indicating system on the Unit 2 Manipulator Crane [2FNR-CRN205] was replaced with a Sensotric unit. The load cell was changed because the Dillon load cell is obsolete and is no longer manufactured. There are no spare parts available. It was replaced with new equipment which is compatible with the existing crane design and for which spare parts are available. Several of the redundant electrical interlocks for the crane were replaced along with the load cell.

CHANGE TITLE

DCP-1605, Rev. 1 Remove Spool Between Sludge Tank [2CND-TK28] Vent and Process Air Duct

CHANGE DESCRIPTION

A spool piece that connects unused Sludge Tank [2CND-TK28] vent to Condensate Polishing Building process air filtration system was removed and the lines blanked off.

This change ensures that high radiation level resin from Resin Hold Tank [2WSS-TK22] cannot overflow into the air filtration system and contaminate 2CND-TK28 via its vent connection to the same ductwork. This prevents contamination of the unused tank.

CHANGE TITLE

DCP-1818, Temporary Switches to Permit Defeat of Fast Bus Transfer

CHANGE DESCRIPTION

The purpose of this minor design change was to make permanent the temporary modification installed under the jumper/lifted lead program in 1987. The temporary modification installed knife switches in the 4160V breaker closing coil circuits to prevent a breaker from re-closing on the bus after the initiation of a fast bus transfer.

CHANGE TITLE

DCP-1828, RTD Heat Trace Cable Splice

CHANGE DESCRIPTION

RTD (Heat Tracing Sensing) Cable No. 2HTSNPX169 was replaced between junction box [2JB\*1098] and RTD junction box [2RTD-JB1-68-69A, B]. A new splice was made in 2JB\*1098.

This RTD cable originally ran (unbroken) from heat trace panel [2HTS\*PNLBISG] to 2RTD-JB1-68-69A, B. The existing cable was replaced by a new length of identical cable between the RTD box and pull box [2JB\*1098]. The splices within 2JB\*1098 are the limits of the plant change from its present configuration. Cable failure was due to borated water entering the conduit and damaging the cable.

CHANGE TITLE

DCP-1847, Installation of Spool Pieces for Maintenance and Cleaning Access to Safeguards Area Air Conditioning Units [2HVR\*ACU207A, B]

CHANGE DESCRIPTION

Flanges were added to Service Water System (SWS) supply and return piping for safeguards area A/C equipment. This allows access to remove scale, silt, and other fouling deposits.

Pipe fouling was causing a diminished flow rate and lessening the heat transfer capability of the safeguards A/C equipment to the point where they were approaching minimum flow rates described in UFSAR Section 9.2.

CHANGE TITLE

DCP-1893, CO<sub>2</sub> Abort Station Indicator Lights

CHANGE DESCRIPTION

Lamp sockets for the CO<sub>2</sub> abort stations [2FPD-ABS1-1, 2FPD-ABS1-2, 2FPDABS1-3, 2FPD-ABSI-4, and 2FPD-ABS2-1C] were replaced with a model having a higher temperature rating and more rugged construction. These lamp sockets have failed on numerous occasions. The failure causes a fuse to blow, which renders one-third of the associated control panel inoperable.

CHANGE TITLE

DCP-1907, Tubing Added to Relief Point of Three Bleeder Relief Valves [2FPD-RV201, 202A and 202B] to Provide an Atmospheric Vent Path for CO<sub>2</sub> Discharge

CHANGE DESCRIPTION

The fire suppression CO<sub>2</sub> holding tanks [2FPD-TK21, 22 & 23] are each provided with over pressure protection by two main relief valves and a bleeder relief valve as indicated below.

<u>Building</u>	<u>Tank</u>	<u>Main Relief Valves</u>	<u>Bleeder Relief Valve</u>
Turbine	2FPD-TK21	2FPD-RV203 2FPD-RV207	2FPD-RV201
Auxiliary	2FPD-TK22	2FPD-RV204A 2FPD-RV208A	2FPD-RV202A
Auxiliary	2FPD-TK23	2FPD-RV204B 2FPD-RV208B	2FPD-RV202B

The main relief valves discharge to outside atmosphere through existing vent piping. The bleeder relief valves open at a lower tank pressure to relieve periodic pressure surges and discharge to the immediate local atmosphere. This minor DCP provided a relief discharge path for each bleeder valve through tubing to the existing atmospheric vent piping. The relieved CO<sub>2</sub> will discharge to the outside atmosphere removing a potential health hazard from the work environment within the Turbine and Auxiliary Buildings.

#### CHANGE TITLE

DCP-1923, Relocate Service Water System Cooling Supply Lines for 2SWS\*RQI100A-D

#### CHANGE DESCRIPTION

Service Water System (SWS) pipe lines 2-SWS-001-843 and 844 provide water to sample coolers for the Recirculation Spray Heat Exchanger Service Water Radiation Monitors [2SWS\*RQI100A-D]. The point at which these lines tap off the 8" SWS supply header was relocated to the downstream side of the Emergency Generator Heat Exchanger Service Water Header Valves [2SWS\*MOV113A&D].

The original tap off location for these pipe lines was upstream of 2SWS\*MOV113A&D causing a continuous flow of SWS to the sample coolers. This lead to excessive silt build up in the coolers and the lines. Since the monitors are only required during a Containment Isolation, Phase B (CIB), there is no need to maintain flow to the coolers during normal plant operation. Flow will be provided by either automatic operation of 2SWS\*MOV113A&D upon emergency diesel generator start, or by manual operator action as required by alarm response procedures.

CHANGE TITLE

DCP-1943, Addition of Penetrations through the Control Room Boundary

CHANGE DESCRIPTION

One new penetration was installed through the Unit 2 Control Room HVAC Equipment Room at elevation 735'-6". This penetration is a four inch "pass-through" pipe with flanged ends to support maintenance activities within the Control Room. This penetration is controlled by procedure and will not affect the function of the Control Room Emergency Bottled Air Pressurization System (CREBAPS).

CHANGE TITLE

DCP-1968, Replacement of Obsolete Temperature Controller [2HVK-TC21B]

CHANGE DESCRIPTION

The Cooling Tower Pump House Outside and Return Air Dampers Electronic Temperature Controller [2HVX-TC21B] were replaced. The vendor replacement controller works on 24 VAC instead of the 120 VAC that the original model used. The vendor recommended 120/24 VAC transformer was installed to power the replacement controller. There is no change to the performance of the system.

CHANGE TITLE

DCP-1998, 2SWS\*RQI100A, 2SWS\*RQI100B, 2SWS\*RQI100C, and 2SWS\*RQI100D Service Water System Piping Modifications

CHANGE DESCRIPTION

The Service Water System (SWS) cooling water flow rates to the Recirculation Spray Heat Exchanger [2SWS\*EI00A, 2SWS\*EI00B, 2SWS\*EI00C and 2SWS\*EI00D] Service Water Radiation Monitors [2SWS\*RQI100A, 2SWS\*RQI100B, 2SWS\*RQI100C and 2SWS\*RQI100D] were marginal during Operations surveillance testing during the third refueling outage. SWS cooling water is obtained from the 8" SWS header supplying cooling water to the Emergency Diesel Generator (refer to DCP-1923 summary). The SWS cooling water discharge from 2SWS\*EI00A, 2SWS\*EI00B, 2SWS\*EI00C and 2SWS\*EI00D was a 1-1/2" carbon steel line routed back to the 8" SWS header for eventual discharge at the Emergency Outfall Structure.

This design change re-routed the sample coolers discharge cooling water to the local floor drain. This will improve SWS cooling water flow rates due to the elimination of back pressure from the 8" SWS header.

#### CHANGE TITLE

DCP-2024, Remove Containment Activity Monitor Suction Check Valve [2CVS\*14] Internals

#### CHANGE DESCRIPTION

On May 11, 1993, a radiation technician was performing a routine filter roll changeout on 2RMR\*RQ303A. When he isolated the moving filter assembly, the sample pump tripped off on a loss of sample flow for no apparent reason. He restarted the pump and it tripped again after 8 minutes. It was determined that check valve 2CVS\*14 was stuck in a closed position. The valve was opened using a vacuum pump. The radiation monitor was placed in operation with a degraded sample flow, due to 2CVS\*14 being partially closed.

This modification removed the internals from check valve 2CVS\*14. This valve is inside the reactor containment in the 1" line that supplies a containment atmosphere sample to Radiation Monitors [2RMR\*RQ303A (particulate activity) and 2RMR\*RQ303B (gaseous activity)]. It is upstream of Containment Air Activity Monitor Penetration Isolation Valve [2CVS\*SOV153B]. A Safety Class 2/Safety Class 3 break is located at the upstream end of the check valve. The check valve's function is to prevent backflow of outside air into the containment if 2CVS\*SOV153A&B were left open and the radiation monitor had an open flow path to Auxiliary Building atmosphere.

#### CHANGE TITLE

DCP-2028, 125VDC Switchboard 2-1 and 2-2 Breaker Coordination

#### CHANGE DESCRIPTION

In order to limit available fault current to 125VDC control circuit breakers at 4KVS\*2AE(DF), 480VUS\*2-8(9), and PNL\*DC2-06 and 11 and ensure they will coordinate with their upstream DC Switchboard breakers, circuit resistance was added upstream of the control circuit breakers. This was accomplished by installing additional lengths of cable to the circuit (for 4KVS\*2AE(DF) and 480VUS\*2-8(9)), eliminating a parallel feeder cable (for PNL\*DC2-11) or both (for PNL\*DC2-06). This change was made to resolve breaker coordination concerns raised by the NRC.

CHANGE TITLE

Deletion of Dewpoint Measurement From Meteorological Tower

CHANGE DESCRIPTION

This procedure change eliminated collection of dewpoint temperature data. The dewpoint temperature instrumentation was retired in place.

This procedure was changed because the Met tower dewpoint sensors were out of service and could not be repaired. Since the NRC's Final Environmental Statements indicate that the effects of cooling tower operation with respect to area environmental impact have been shown to be inconsequential, there is no need for continued collection of dewpoint temperature information. Computer point software changes will be made to delete reference to the sensor data.

CHANGE TITLE

UFSAR Table 9.2-2, Post Accident Sampling Panel Cooler [2PAS-E101] Flow Requirements Reduction to 3 GPM

CHANGE DESCRIPTION

Table 9.2-2 of the Unit 2 UFSAR required that the Post Accident Sampling (PAS) panel cooler [2PAS-E101] receive 10 GPM of Service Water System (SWS) cooling flow during a Design Basis Accident (DBA). Calculation 10080-DMC-0689 has shown that this requirement can be reduced to 3 GPM of SWS with no adverse effects to the cooler's performance during a postulated DBA event.

The requirement of 10 GPM was excessively conservative for the application. A 3 GPM SWS flow minimum for this cooler assumes a 40 percent degradation in heat transfer capabilities due to fouling on the SWS side of the cooler while providing a 9 percent margin over the heat load that the cooler must remove in order to cool the sample from 650°F to 120°F.



### CHANGE TITLE

WCAP - 13798, 30 Percent (25 Percent Large and Small Break LOCA) Steam Generator Tube Plugging Analysis Program - Engineering and Licensing Report

### CHANGE DESCRIPTION

The change included the following: (a) For the Large Break and Small Break Loss of Coolant Accident (LOCA) Analysis, the maximum tube plugging level is revised to 25 percent in any one steam generator or the plugging level that results in the reduction of the Reactor Coolant System (RCS) loop flow rate to the Thermal Design Flow (TDF) limit; (b) for the systems and components evaluations, the Non-LOCA Analysis, and the Steam Generator Tube Rupture (SGTR) Analysis, the maximum plugging level is revised to 30 percent in any one steam generator or a plugging level that results in the reduction of the RCS loop flow rate to the TDF limit; (c) a reduction in the TDF from 88,500 GPM per loop to 87,200 GPM per loop (261,600 GPM total); and (d) the incorporation of loop flow asymmetry of up to 5 percent in the analyses and evaluations in which RCS flow rates are important. The reduced total TDF value of 261,600 GPM (reduced by 1.5 percent) was reviewed by NRC and approved on 6/01/93 as a technical specification change.

Based on the power capability parameters identified, the current design transients remain bounding for increased steam generator tube plugging levels as identified above. This conclusion is valid only to the analytical steam condition of 760 psia and 512.3 F due to component design considerations.

Revised loads have been calculated for the RCP motors. The new loads have increased due to both revised performance estimates (RCS Temperatures) and the effects of the proposed tube plugging. WCAP-13798 Section 5.3.2 addresses this concern and concludes that it does not impact the safety-related function of the motors.

The previous justification (WCAP-12966 dated June 1991) for 20 percent tube plugging was outdated as the 20 percent analysis utilized the BART evaluation methodology which is being updated. BASH evaluation methodology is replacing BART and will be used for cycle specific  $F_q$  limits. BASH was utilized in the 30 percent plugging analysis. The reduction in the TDF and the incorporation of loop flow asymmetry provide analysis margin which allow an increased tube plugging limit.

#### CHANGE TITLE

Containment Integrity During Station Blackout Events

#### CHANGE DESCRIPTION

The NRC Safety Evaluation Report for station blackout (SBO) events, dated November 23, 1990, identified certain containment isolation valves (CIVs) that would require closure capability to ensure appropriate containment integrity during an SBO event. The Recirculation Spray Pump Outside Containment Suction Isolation Valves (2RSS\*MOV-155A, B, C, and D are among the identified valves, but will be maintained open for both normal and accident conditions because closing them would render the associated containment depressurization safety systems unavailable in the event of a Containment Isolation Phase B signal during a loss of coolant accident.

The recirculation spray system is a closed loop system that takes suction from the containment sump and is not expected to be breached during an SBO event. In addition, the closure of these valves could raise concerns over the appropriateness of actions that could make safety systems unavailable and create conflicts with our symptom based EOPs. Therefore, provisions to ensure closure capability of these valves during an SBO event, as described in the NRC Safety Evaluation Report for SBO events, will not be implemented.

NRC Station Blackout Team Inspection Report Numbers 50-334/93-80 and 50-412/93-80, dated October 28, 1993, documented that the actions taken to provide containment integrity during an SBO event (including those described above) were appropriate.

#### CHANGE TITLE

2BVT 2.34.1, "Accumulator and Check Valve Verification Test"

#### CHANGE DESCRIPTION

2BVT 2.34.1, "Accumulator and Check Valve Verification Test," verifies that the check valve and pneumatic actuator associated with the Main Steam Line Isolation Valves [2MSS\*AOV101A, B, and C] perform their intended function. Verification that leakage through the instrument air line, check valve, drain valves, accumulator, and any fittings is within design limits is measured by temporarily isolating instrument air to [2MSS\*AOV101A, B, and C] while the plant is in Modes 5 or 6.

CHANGE TITLE

Chapter 12, "Radiation Protection" Section 12.5.3.5.1.2, Internal Exposure Assessment/Bioassay Program

CHANGE DESCRIPTION

This safety evaluation was performed in support of UFSAR changes that update procedures and practices associated with the Internal Exposure Assessment & Bioassay Program at BVPS. The changes narrowed the scope of the program by applying new monitoring thresholds to select individuals subject to the program. Changes conform to good health physics practices and are in compliance with the applicable NRC SER requirements, Regulatory Guides 8.9 and 8.26, 10 CFR 20, and ANSI standards.

CHANGE TITLE

Health Physics Manual Chapter 1, "Health Physics Standards"

CHANGE DESCRIPTION

This safety evaluation was performed in support of changes to implement the revised 10 CFR 20. Chapter 1 of the Health Physics Manual (HPM) contains the policy, criteria, and guidance that comprise the standards for the Health Physics Program. Chapter 1 implements the administrative procedures of Unit 1 UFSAR Section 11.5 and Unit 2 UFSAR Section 12.5. Implementation of these changes was mandated by the Nuclear Regulatory Commission.

CHANGE TITLE

Installation of an Audio/Visual CCTV Surveillance System During the Fourth Maintenance and Refueling Outage

CHANGE DESCRIPTION

This temporary modification installed a closed circuit television surveillance system in the Reactor Containment Building for the Unit 2 maintenance and refueling outage. Installation of this system involves the routing of IEEE rated cable which affects five fire stops and an electrical penetration. Twelve surveillance camera subsystems are supported by this change. This modification was made to reduce personnel exposure by applying ALARA principles.

CHANGE TITLE

BVPS-CM 2-7.2, Chemical Feed System

CHANGE DESCRIPTION

This change allowed for the addition of ethanolamine and ammonium chloride to the secondary system. Ethanolamine is a pH-control additive, similar to morpholine. Ammonium chloride will be added as needed to maintain a Steam Generator sodium to chloride molar ratio within EPRI Secondary Water Chemistry Guidelines, Revision 3.

CHANGE TITLE

BVPS-CM 2.45, Ethanolamine

CHANGE DESCRIPTION

This change incorporates ethanolamine into the approved list of chemicals used by the Chemistry Department at both Unit 1 and Unit 2.

Ethanolamine is a pH-control additive, similar to morpholine. The change includes impurity specifications which will be used in the procurement process.

CHANGE TITLE

BVPS-CM 1.3.30, Sodium Molybdate Corrosion Inhibitor

CHANGE DESCRIPTION

This change allowed the use of sodium molybdate in the primary plant component cooling water system. This alternative has been implemented to reduce environmental and personnel safety hazards which result from using the previous inhibitor (potassium chromate).