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February 24, 1978

JAMES S. GRANT
Vice President
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Docket No. 50-346
License No. NPF-3

Serial No. 1-14

Mr. James G. Keppler
Regional Director, Region III
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

Enclosed find two (2) copies of P-3-77-1, Report of Facility Change Tests, and Experiments Conducted Without Prior NRC Approval, for the required 1977 events.

Very truly yours,

JSG/JRL/ljk

Enclosure

cc: Dr. Ernst Volgenau, Director
Office of Inspection and Enforcement
Encl: 40 copies P-3-77-1

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SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-001

SYSTEM: Reactor Vessel

COMPONENT: Reactor Vessel Head "O"-Ring Clips

CHANGE, TEST, OR EXPERIMENT: New design "O"-Ring backing plates and "O"-Ring retainer clips were installed on the reactor vessel head. This work was completed on May 7, 1977.

REASON FOR THE FCR: The above change was made with the recommendation of and with the assistance of the reactor vendor, Babcock and Wilcox, in order to incorporate the improved design clip.

SAFETY EVALUATION: The new design clip recommended by Babcock and Wilcox performs the same function and fit as the old wire clip. The form is slightly changed in that the wire clip was replaced by a stamped metal clip. The stamped clip will perform its required function as well or better than the wire clip. The material specified, AISI TP-304, presents no problem in this application. Therefore, there are no unreviewed safety questions and no change was required to the Technical Specifications.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-002

SYSTEM: Safety Features Actuation System (SFAS)

COMPONENT: SFAS Channel 1 and 4 K03 Relays

CHANGE, TEST, OR EXPERIMENT: On May 11, 1977, work was completed which wired out unused contacts on the K03 relays in SFAS Channels 1 and 4. Work was completed per a Field Change Procedure (KGS136), supplied by and under the supervision of the vendor, Consolidated Controls Corporation.

REASON FOR THE FCR: These initially spare contacts will be used as part of the pressurizer heater control interlock, a licensing commitment to the NRC.

SAFETY EVALUATION: This modification to the SFAS does not affect the safety of this system for the following reasons:

1. Work was done under the Field Change Package KGS-136 which was prepared by Consolidated Controls Corporation under their QA program.
2. Isolation between the 1E sections of the circuits and non-1E sections of the circuit was performed in cabinets external to the SFAS cabinet.
3. No other safety functions of the SFAS will be affected by this modification.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-006

SYSTEM: Miscellaneous

COMPONENT: Control Room Vertical Panels

CHANGE, TEST, OR EXPERIMENT: On July 19, 1977, covers were fabricated and installed on the east and south ends of the vertical panels in the Control Room.

REASON FOR THE FCR: These panels were installed to close the east and south ends of these panels.

SAFETY EVALUATION: The added vertical panel covers will in no way affect the safety function of the Control Room panels, nor will the seismic qualification be affected.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-034

SYSTEM: Reactor Coolant System (RCS)

COMPONENT: Decay Heat Normal Suction Valve Controls

CHANGE, TEST, OR EXPERIMENT: On October 10, 1977, the control scheme of valve DH-12, Decay Heat (DH) Pump Suction Isolation Valve was modified in conformance with drawings E-52B, Sheet 24C, Revision P3 and E-52B, Sheet 24D, Revision 3. Bechtel Wiring Diagrams E-200B; E-221, Sheet 20; E-286; E-528; E-529; E-557A, Sheet 40A and 40B; and E-634B, Sheet 5 were revised to reflect the change. The valve was stroked from all control points after the modifications were completed to ensure operability.

REASON FOR THE FCR: This wiring change was completed to prevent inadvertent closure of DH-12 when power is removed and then restored to the control circuit. These closures were being caused by a contact racing condition when power was applied, a design deficiency within the control circuit. Closure of DH-12 isolates the RCS from the pressure relieving capacity of the normal cooldown relief valve in the DHR System. This could result in exceeding the pressure temperature limits on the primary system.

SAFETY EVALUATION: This change to the control scheme for valve DH-12 does not change the safety function of the interlock on the valve. The valve cannot be opened when the RCS pressure is above the setpoint on PSH-RC2B4. Also, if the valve is open and 480 V AC power is available to the valve operator, the valve will automatically close if the RCS pressure raises above the setpoint on PSH-RC2B4. This change only prevents the valve from inadvertently closing due to an auxiliary relay contact race when 480 V AC power is restored to the valve operator.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-041

SYSTEM: Safety Features Actuation System (SFAS)

CCOMPONENT: "SAM" Logic for AF 599

CHANGE, TEST, OR EXPERIMENT: This Facility Change Request was written to document the disconnecting of the wire used for the logic of a valve previously actuated by the SFAS. The Auxiliary Feedwater Discharge Valve to Steam Generator 2 (AF 599) logic was disconnected from the SFAS by lifting Wire W of Terminal Board TB 60-8 in Cabinet C 5756C.

REASON FOR THE FCR: The Auxiliary Feedwater Discharge Valve to Steam Generator 2 was removed from SFAS control. This Facility Change Request documented the spare cable and verified all drawing changes required were completed.

SAFETY EVALUATION: Valve AF-599 does not require a SAM light, as it is not closed with a safety actuation (SA) signal from SFAS. Redundant position indications have been provided (computer and indicating lights) using redundant position switches on this valve.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-079

SYSTEM: Radiation Monitoring System

COMPONENT: Radiation Detectors RE 5327 and RE 5328

CHANGE, TEST, OR EXPERIMENT: On November 25, 1977, noise suppression mufflers were installed on Control Room Ventilation Radiation Detectors RE-5326 and RE-5328. These mufflers were supplied by Victoreen, the radiation detector vendor and installed with their supervision.

REASON FOR THE FCR: This FCR was initiated to reduce the noise level in the Control Room caused by these radiation detectors. These detectors are solid piped to the ductwork which is conducive to sound transmittal to the ductwork.

SAFETY EVALUATION: The noise suppression mufflers perform no safety function nor do they affect the safety function of the associated radiation monitors. The investigation by Victoreen indicated that the seismic qualification for these radiation monitors was not invalidated by the installation of the mufflers. Therefore, the FCR does not involve an unreviewed safety question.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-108

SYSTEM: Electrical Penetrations

COMPONENT: Sealant Specifications

CHANGE, TEST, OR EXPERIMENT: The requirement for shielding type sealant material installed to a full two feet six inch depth in electrical penetrations as shown on Drawing E-378B, Sheet 1 and Bechtel Specification 7749-M-255 was changed to a depth of two feet, 0 inches of shielding sealant. The new specification also calls for sealing the insides of the conduits to a two feet depth.

REASON FOR THE FCR: The original specification and drawing were intended to be used to finish sealing of the penetrations and covering the exposed ends of the conduits not filled with sealant. However, the shielding sealant has been applied to a depth of two feet, 0 inches inside all conduits, and the sealant applied in this manner accomplishes the dual purpose of adequate personnel shielding and the establishment of a pressure boundary, making additional sealing unnecessary.

SAFETY EVALUATION: An analysis of the electrical penetration shielding property by the architect-engineer, Bechtel Power Corporation, indicated that a 2'-0" depth of SF-150 silicone foam will reduce gamma radiation by a factor of 1.85×10^4 and will reduce the neutron dose rate to less than 0.03 mr/hr. Therefore, the sealant applied in the manner described above provides adequate personnel radiation protection.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-119

SYSTEM: Diesel Generator Fuel Oil Transfer System

COMPONENT: Local Control Switches for Fuel Oil Pumps

CHANGE, TEST, OR EXPERIMENT: On August 16, 1977, work was completed which relocated the local control switches (NP 1951, 1952) for the Diesel Generator Fuel Oil Pumps.

REASON FOR THE FCR: The initial installation location of these control switches was inaccessible. These switches are the only way to manually start or stop these pumps since there is no remote control station.

SAFETY EVALUATION: Relocation of the local control stations will not alter their function, which is to meet Technical Specification 4.8.1.1.2.a.3 (verifying that the fuel transfer pumps can be started and transfer fuel from the storage system to the day tank). The safety function of the fuel oil system is not altered by this facility change.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-120

SYSTEM: Nuclear Instrumentation

COMPONENT: Source Range Neutron Detectors NI-1 and NI-2

CHANGE, TEST, OR EXPERIMENT: On July 27, 1977, new cable was pulled in spare conduits 39035B and 39010D for Source Range Neutron Detectors NI-1 and NI-2. The necessary terminations were completed and the initial cables were spared.

REASON FOR THE FCR: This work was done to attempt to reduce the noise level by separation of the source range cable.

SAFETY EVALUATION: There will be no adverse impact on safety since the new cable installation will only change the cable routing.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-134

SYSTEM: Steam and Feedwater Rupture Control System (SFRCS)

COMPONENT: SFRCS Steam Generator Level Bistable Cabinets

CHANGE, TEST, OR EXPERIMENT: On July 9, 1977, work was completed which added capacitors to the four SFRCS Steam Generator Level Bistable Cabinets. This work was performed per a vendor supplied Field Change Package (Consolidated Controls Corporation Field Change Package KHD 136).

REASON FOR THE FCR: This change was necessary to filter the "noise" from the analog input to these cabinets. The noise was coming from the field wiring and the level transmitters.

SAFETY EVALUATION: This change will not affect the safety or seismic qualification of these steam generator level bistable cabinets. Also, the response time of steam generator level instrumentation will remain within the total response time required by the SFRCS. Therefore, the safety of the SFRCS will not be affected.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-139

SYSTEM: Steam and Feedwater Rupture Control System (SFRCS)

COMPONENT: Terminals on the SFRCS Cabinets C5762A and C5792

CHANGE, TEST, OR EXPERIMENT: On September 9, 1977, studs were installed on the field wiring side of Terminal Block TB 11, Terminals 9, 10, 12 and 13 in SFRCS Cabinets C5762A and C5792. These studs were installed with a locknut to facilitate the placement of jumpers on these terminals.

REASON FOR THE FCR: During the performance of Surveillance Test ST 5031.14, the "SFRCS Monthly Test", startup feedwater valves SP7A and SP7B control signal must be disabled by jumpering these contacts. The initial installation consisted of screws at these terminals which would not allow jumpering without disrupting the circuit continuity, tripping the startup feed water valves.

SAFETY EVALUATION: The addition of the studs to ther terminals is only for the purpose of conducting the SFRCS Monthly Test. This change will have no effect on the functioning of the system, and hence no impact on facility safety.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUEST

FCR NO: 77-147

SYSTEM: Control Rod Drive Control (CRDC) System

COMPONENT: Asymmetric Runback

CHANGE, TEST, OR EXPERIMENT: On September 12, 1977, work was completed on the Control Rod Drive Control System to modify the asymmetric runback function of the CRDC. The asymmetric runback to 60% of full power was revised so that both an asymmetric rod condition and an in-limit occur in order to initiate the automatic runback. The work was completed and tested per Babcock and Wilcox Field Change Package #69.

REASON FOR THE FCR: This was to prevent unnecessary runbacks to 60% of full power.

SAFETY EVALUATION: Only the trip portion of the CRDCS is Q-listed. Since this change does not affect the trip portion of the CRDCS, an unreviewed safety question is not involved.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-150

SYSTEM: Core Flood System

COMPONENT: Core Flood Injection Line Check Valves, Bechtel No. B3-3 and B3-4

CHANGE, TEST, OR EXPERIMENT: On August 15, 1977, Bechtel Specification 7749-M-212, and Velan Valve Drawing D00-166-S were revised to reflect "as built" conditions. The nipples and caps welded to Core Flood Valves Injection Line Check Valves CF31 (Bechtel No. B3-3) and CF30 (Bechtel No. B3-4) were SA-479-316 rather than SA-182-F304 as required by the specifications.

REASON FOR THE FCR: To reflect "as built" conditions.

SAFETY EVALUATION: The change of the nipple and cap material from SA-182-F304 (as required by Specification M-212) to SA-479-316 will have no effect on the functioning of the Core Flood Valves and hence no effect on the safety of the system.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-151

SYSTEM: Component Cooling Water System

COMPONENT: Component Cooling Water Heat Exchangers

CHANGE, TEST, OR EXPERIMENT: The requirement for a stress report on the Component Cooling Water Heat Exchangers was deleted from Bechtel Specification 7749-M-23, Form ED-6058.

REASON FOR THE FCR: ASME Code Section VIII does not require such a report and the report was not available.

SAFETY EVALUATION: This Facility Change Request changes Specification 7749-M-23, Form ED-6058 in particular, to reflect the actual documentation requirements of Section VIII of the ASME Code. An unreviewed safety question is not involved.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-152

SYSTEM: Emergency Ventilation System

COMPONENT: Energy Pipe Break Blowout Panels Pressure Setpoint

CHANGE, TEST, OR EXPERIMENT: On July 16, 1977, work was completed which increased the blowout setpoint of the negative pressure boundary high energy break blowout panels from .5 psid to 1.0 psid. This change was implemented on all thirteen panels.

High energy line breaks were re-analyzed in the areas of the Auxiliary Building affected by the change in the relief points. It was determined that peak pressures resulting from any of these breaks were consistently below the design limits in the affected areas.

REASON FOR THE FCR: A Field Quality Control Engineer employed by Bechtel (the architect/engineer for Davis-Besse Unit 1) asked for comparison of the set pressure of the blowout panels to the pressure calculated to occur on the panels under a Loss of Coolant Accident (LOCA) condition. The subsequent Bechtel investigation showed the blowout panels were designed to blowout at 0.5 psid which is less than the 0.8 psid that was calculated to occur after a LOCA. These blowout panels are part of the negative pressure boundary wall and were installed to protect the penetration rooms from overpressurization if a steamline or feed-water break would occur. These panels should have been designed not to blowout under LOCA pressure conditions.

SAFETY EVALUATION: The increase in the relief point of the blowout panels to 1.0 psid will not change the analyses associated with a LOCA. The peak pressures in the areas of the Auxiliary Building affected by this change in the relief point are still below the design limits (Table 3-6 aa of the FSAR, Compartment Pressurization).

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-158 and 77-159

SYSTEM: Miscellaneous Piping

COMPONENT: Miscellaneous Piping Specifications M-190 and M-601

CHANGE, TEST, OR EXPERIMENT: Specification M-190 and M-601 were changed to permit the use of previously installed unions, screwed fittings, screwed pipe, and stainless steel pipe and swagelock fittings in class GCB, HBD, HSC piping.

REASON FOR THE FCR: Piping class sheets in Specifications M-190 and M-601 did not allow the use of some installed piping specified in Bechtel Non-Conformance Reports 1222, 1223, 1224, 1225, 1226, 1228, 1229 and 1230.

SAFETY EVALUATION: This change permits the use of unions, screwed joints, swagelock fittings and stainless steel material on certain HBD lines (150 lb, carbon steel, ANSI B31.1.0) as shown on Notes 10 and 11 of M-601, Sheet 27; unions on GCB-8 lines (300 lb, stainless steel, ASME Section III, Class 2) as shown on Note 4 of M-601, Sheet 17; and unions on HSC-77 lines (150 lb, stainless steel radwaste, ASME Section III, Class 3), that is shown on Note 3 of M-601, Sheet 38. These screwed connections and materials are permitted by the applicable codes and standards and will not adversely affect the safety function of the systems to which these lines are connected.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-160

SYSTEM: Instrument AC Power

COMPONENT: Fuse Ratings for the Containment Hydrogen Analyzers

CHANGE, TEST, OR EXPERIMENT: On December 29, 1977, Bechtel Electrical Drawing E-641A, Sheets 1A and 2A were revised to show the fuse ratings for the Containment Hydrogen Analyzers (circuit Y119 and Y218) as 10 amps and the load rating as 5 amps.

REASON FOR THE FCR: This Facility Change Request was issued to correct a drawing error. With one hydrogen dilution pump and analyzer in operation, each channel exceeded the capacity of the previously installed 4 amp fuse.

SAFETY EVALUATION: The changing of the fuse size in these cabinets will in no way adversely affect the safety function or seismic qualification of these panels or the containment hydrogen analyzer.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-166

SYSTEM: Emergency Diesel Generators

COMPONENT: Fuel Oil Supply Lines

CHANGE, TEST, OR EXPERIMENT: A 1/2 inch thick steel load distribution plate was added over the top of the two 1½"-HB C-86 supply lines from the Emergency Diesel Generator Fuel Oil Storage Tanks (T153-1, and T153-2).

REASON FOR THE FCR: The existing structural backfill did not meet the missile protection requirements shown on Drawing 7749-C-37, Revision 9 (Bechtel Non-Conformance Report 1232) which required 3½ feet of backfill.

SAFETY EVALUATION: The original structural backfill design required 3'-6" minimum cover for missile protection of the 1½"-HBC-86 (supply line). The revised design provides equal or better missile protection in that it employs both a 1/2" steel plate and 21" of backfill over the supply lines. Therefore, the Facility Change Request involves no adverse effects on the functioning of the emergency diesel generator system.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-167

SYSTEM: Steam Generator

COMPONENT: Steam Generator Level Instrumentation Cabinet 9N41

CHANGE, TEST, OR EXPERIMENT: On July 25, 1977, work was completed by Instrument and Control Personnel which modified 24 volt and 15 volt power supplies (PL9N41-18 and 19) for A.C. input operation. Work was completed and tested per Field Change Procedure KHN136 supplied by the vendor, Consolidated Controls Corporation.

REASON FOR THE FCR: This FCR was performed to correct a design error. The initial 15 and 24 volt power supplies did not operate properly on A.C. voltage supply.

SAFETY EVALUATION: This change to modify the power supplies for AC input operation does not adversely affect the operation of the Steam Generator level instrumentation. The change has been designed by the original equipment supplier and approved by Bechtel as adequate for the intended service.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-181

SYSTEM: Sampling System

COMPONENT: Nuclear Area Sampling

CHANGE, TEST, OR EXPERIMENT: Piping and Instrument Diagrams M-031, M-037A, M-039, and M-040A were revised to show the secondary root valves that exist on the Nuclear Area Samples. No physical work was required. Only the drawings were revised to document the double valves as they exist.

REASON FOR THE FCR: The reason for the drawing change was to clarify the piping and instrument diagrams to prevent misinterpretation of the valve lineup required.

SAFETY EVALUATION: These piping and instrument diagram changes will not affect the function of the system and do not involve an unreviewed safety question. The normally shown valve positions reflect operating procedures which consider high radiation in the area of some of the sampling system valves.

SUMMARY OF 1977 COMPLETE FACILITY CHANGE REQUESTS

FCR NO: 77-188

SYSTEM: Spent Fuel Pool Cooling

COMPONENT: Refueling Canal

CHANGE, TEST, OR EXPERIMENT: Bechtel Piping and Instrument Diagram 7749-M-035 was revised to indicate the actual capacity of the refueling canal as 388,000 gallons. Prior to this revision, the capacity was incorrectly given as 355,000 gallons.

REASON FOR THE FCR: To correct an earlier capacity calculation.

SAFETY EVALUATION: This FCR changes Piping and Instrument Diagram M-035 to reflect the actual capacity of the refueling canal. Decay heat from stored fuel is removed by two pumps and two heat exchangers. Spent fuel pool water temperature is automatically controlled by temperature controllers, which are not affected by the total amount of water in the Spent Fuel Pool. Boron concentration in the Spent Fuel Pool is maintained to equal to or greater than the boron concentration in the refueling canal (1800 ppm) during refueling operations. Therefore, the safety function of the system is not altered by this change.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-162

SYSTEM: High Pressure Injection (HPI) System

COMPONENT: HPI Lube Oil Pumps Wiring Diagram E52B

CHANGE, TEST, OR EXPERIMENT: The HPI Lube Oil Pumps, Bechtel Wiring Diagram E52B, Sheets 63 and 64, were revised to correct an error on the drawings. The local switches were changed to show the normally open contacts and Note 3 was changed to "PDS contact opens on flow from the A.C. Pump and closes to start the D.C. Pump when flow is lost from the A.C. Pump".

REASON FOR THE FCR: The drawings were revised to correct a drawing error.

SAFETY EVALUATION: The subject drawing changes are needed to reflect "as-built" conditions and do not affect the ability of the equipment to perform its safety function.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-196

SYSTEM: A.C. Instrument Power

COMPONENT: Inverter YV1

CHANGE, TEST, OR EXPERIMENT: On September 7, 1977, modifications were made to Essential Instrument A.C. Power Supply Inverter YV-1 to perform a test on inverter operation during short circuits at various phase angles. This was done to verify the modification was in conformance with Bechtel Specification 7749-E-20 prior to permanent implementation. Test was completed and inverter YV-1 restored to pre-test status.

REASON FOR THE FCR: In May, 1977, difficulties with current limiting in Inverters YV-1 and YV-2 led to investigation by the vendor, Cyberex. This test was done as part of the investigation of these difficulties.

SAFETY EVALUATION: The procedure which specifies the Inverter YV-1 modification and testing stipulates that Channels 2, 3 and 4 of essential 120 volt AC instrumentation panels are energized from their normal source. Channel 1 panel during the modification and most of Inverter YV-1 testing is energized from its alternate source. These conditions are allowed by Technical Specification. Therefore, for the period of time covered by the above conditions, there is no nuclear safety problem.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-199

SYSTEM: Auxiliary Feedwater

COMPONENT: Auxiliary Feed Pumps Speed Control Circuits

CHANGE, TEST, OR EXPERIMENT: On August 17, 1977, two additional relays were wired in on each Auxiliary Feed Pump Control Circuit. The affected drawings, 7749-E-285, 7749-E-289 Sheet 1, 7749-E-045B Sheet 11A will be revised to reflect the above change.

REASON FOR THE FCR: It appeared that the original relays did not have a high enough current capacity to operate the speed changer motor. In an attempt to remedy this problem, the above change was made. In retrospect, this change did not solve the speed control circuit difficulty. Facility Change Request 77-221 located and resolved the circuit deficiency.

SAFETY EVALUATION: These two new contacts split the current carried by the original lone relay. This change does not change the speed control function of this circuit. Therefore, it will not degrade the safety of the unit.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-200

SYSTEM: Auxiliary Feedwater

COMPONENT: Auxiliary Feedwater Pumps 1 and 2

CHANGE, TEST, OR EXPERIMENT: On December 14, 1977, work was completed which removed the dynamic braking resistors from the speed control circuits of both Auxiliary Feedwater Pump Turbines.

REASON FOR CHANGE: The originally installed resistors had a power rating which was too low. This caused the resistors to overheat and fail.

SAFETY EVALUATION: The dynamic braking resistor was installed to reduce the RPM/pulse change. This is pump RPM change (either increase or decrease) per speed change demand pulse from Steam Generator (SG) level error signal.

Elimination of the dynamic braking resistor from the control circuit will not impair the safety system design function of maintaining Steam Generator level with the Auxiliary Feed Pump. Test results during Hot Functional Testing (HFT) in December 1976/January 1977 and during mini HFT of August 1977 reveal that without the resistor and with a shorted (zero ohm) resistor, the SG level was maintained using the Auxiliary Feed Pump.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-217

SYSTEM: Various Power Supplies

COMPONENT: Various

CHANGE, TEST, OR EXPERIMENT: On October 4, 1977, work was completed as follows:

1. The time delay of the undervoltage relays set at 90% of 4.16 kV safety related bus voltage would be changed from 10 seconds to 9 seconds and the time delay of the diesel generator breaker was changed from 1 second to .5 second.
2. An additional overvoltage alarm setpoint on the 4.16kV safety related bus was added.
3. Overcurrent relay setpoints for safety related 4kV motors was revised.
4. The 1 amp fuses in the secondary of the control power transformers located in all safety related and non-safety related motor control centers was changed to 2.5 amp slow blow fuses.
5. The undervoltage alarm setpoints of the plant were reset to further enhance the coordination between the alarm system and the protective system.

The affected drawings are identified by the FCR and will be revised.

REASON FOR THE FCR: The reason for the above changes was to meet commitments to the NRC contained in Toledo Edison Letter No. 293 (dated July 18, 1977). These changes remove the station from the voltage restriction condition 2.c.(3)(q) of the operating license.

SAFETY EVALUATION: These modifications have previously been evaluated by the NRC by the submittal of Toledo Edison Letter No. 293.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-231

SYSTEM: Main Steam

COMPONENT: Main Steam Isolation Valve (MSIV) MS-100 and MS-101

CHANGE, TEST, OR EXPERIMENT: The reason for this Facility Change Request was to approve the bypassing of the instrument air line filter with copper tubing. This work was performed by Maintenance personnel with verbal approval of Power Engineering on August 15, 1977. Also, Drawing 7749-M-304-6 Revision 11 was issued to reflect this condition.

REASON FOR THE FCR: The plastic cover of the instrument air line filter failed at the threads. This component failure caused a loss of instrument air to the valve which closes (fails safe) without air pressure acting on the operator. See Licensee Event Report NP-33-77-55 for further details.

SAFETY EVALUATION: The filters were not necessary since the air supply is instrument air which is dry and clean. By replacing the filter with tubing, the possibility of the MSIV inadvertently closing due to failure of the filter is eliminated.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-251

SYSTEM: Emergency Diesel Generators

COMPONENT: Emergency Diesel Generator Fuel Oil Transfer Pumps

CHANGE, TEST, OR EXPERIMENT: This FCR was issued to revise Bechtel Drawing FSK-M-888 to show the recirculating siphon break piping on both Emergency Diesel Generator Fuel Oil Transfer Pumps.

REASON FOR THE FCR: The drawing was changed to reflect the "as built" condition. No physical change was completed.

SAFETY EVALUATION: The drawing change per this FCR reflects piping added of equal class for this siphon break. The design requirements of the system are not altered.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-307

SYSTEM: Main Steam

COMPONENT: Main Steam Safety Valves

CHANGE, TEST, OR EXPERIMENT: On October 26, 1977, work was completed which modified the main steam safety valve drain lines and associated supports. Additional supports were installed to prevent damaging piping reactions during relief valve actuations. All affected drawings were revised to reflect the modifications.

REASON FOR THE FCR: The changes to the supports and piping was made to prevent the drain lines from being damaged when the safety valves relieve as had previously occurred.

SAFETY EVALUATION: Revising the main steam safety valve drain line supports will not adversely affect the functioning of this system.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-327

SYSTEM: 480 Volt Motor Control Centers (CC) E11C and F11A

CHANGE, TEST, OR EXPERIMENT: On October 6, 1977, molded case breaker settings were verified to be set correctly for breakers BE 1168 and BE 1150 on MCC E11C and BF 1114 on MCC F11A. The breakers BF 1114 and BE 1168 supply containment lighting. Breaker BE 1150 is the feed to MCC E11E.

REASON FOR THE FCR: This was a new installation which required verification of the breaker setting.

SAFETY EVALUATION: Only one change applies to "Q" listed circuitry, that is on Breaker BE 1150 on MCC E11C

This change is required to permit proper coordination. This change in no manner adversely affects safety aspects of Davis-Besse Unit 1.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-406

SYSTEM: Decay Heat/Low Pressure Injection

COMPONENT: Decay Heat Isolation Valve Pit Watertight Cover

CHANGE, TEST, OR EXPERIMENT: On November 8, 1977, Revision 9 of Bechtel Drawing C-635 was completed which reflected the "as-built" condition of the Decay Heat Valve Pit Watertight Cover on Valves DH 11 and DH 12.

REASON FOR THE FCR: The reason for this change was to make the drawing coincide with the "as-built" condition.

SAFETY EVALUATION: The installed fasteners, 1/2" carbon steel bolts partially welded around the underside of the flange, provide equal or greater holddown capacity compared to originally designed 3/8" carbon steel studs. The function of the valve pit cover is to prevent water leakage into the valve pit rendering inoperable the decay heat valves DH 11 and DH 12. Because the watertight seal is provided by a silicone rubber gasket compressed around this removable panel, the safety functioning of this equipment is not adversely affected by this facility change.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-417

SYSTEM: Control Rod Drive Control System (CRDCS)

COMPONENT: Undervoltage Trip Units

CHANGE, TEST, OR EXPERIMENT: The originally supplied undervoltage trip units on all four CRDCS trip breakers were replaced with trip units of identical identification and function. After the replacement units were installed, testing of the breakers demonstrated the proper operation of the undervoltage trip devices.

REASON FOR THE FCR: As a result of General Electric (the device manufacturer), and Diamond Power (the CRDCS vendor), investigation into delayed opening problems at other utilities, it was recommended that the original undervoltage trip units be replaced.

SAFETY EVALUATION: The originally supplied undervoltage trip units on all four control rod drive control system trip breakers were replaced with trip units of identical identification and function. The original General Electric supplied undervoltage trip units may have been manufactured incorrectly and may have not performed their intended function. The batch of trip units that were incorrectly manufactured could not be positively identified by the marking on the trip unit. However, a physical inspection would immediately identify the unit as being defective. Because a physical inspection of the trip unit would require that it be removed from the circuit breaker, it was decided that the unit be totally replaced with a known correctly manufactured unit. After the replacement units are installed, testing of the undervoltage trip circuits of the circuit breakers further demonstrated that the new trip units are operating properly. Because the original suspect undervoltage trip units are to be replaced with identical properly manufactured trip units, no adverse affect on safety exists.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-450

SYSTEM: Auxiliary Feedwater

COMPONENT: Auxiliary Feed

CHANGE, TEST, OR EXPERIMENT: On November 22, 1977, work was completed which installed a spring to the upper valve lever and to the lower support bracket on both Auxiliary Feed Pumps Turbine Governors. The spring which was provided with a tension adjustment should balance the governor intake. Terry Turb the turbine vendor supplied the parts and supervised the installation.

REASON FOR THE FCR: Vibrational closure of Auxiliary Feed Pump 1-2 Governor Valve had occurred rendering the Auxiliary Feed Pump inoperable. Since there was no force except friction to hold the valve open in the original design, the gravitational forces combined with the vibrational forces caused the valve to close. This spring should prevent vibrational closure.

SAFETY EVALUATION: The Auxiliary Feed Pump Turbine Governor Valve controls the speed of the turbine. This change, which adds a spring between the upper valve lever and the lower support bracket of the governor, will alter the linkage such that vibration should not close the AFPT governor valve. This is a design improvement, because the governor valve will remain open when it should be open, even in the presence of vibration. Therefore, the safety function of the Auxiliary Feedwater System will be enhanced.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-451

SYSTEM: Auxiliary Feedwater

COMPONENT: Auxiliary Feed Pumps Turbines Governors

CHANGE, TEST, OR EXPERIMENT: On October 6, 1977, a modification was completed on both Auxiliary Feed Pump Turbine Governors by the vendor, Woodward Governor. The work was done at the Woodward facilities with manufacturing, assembling, and testing done by Woodward. Terry Turbine, the turbine vendor, witnessed the test and supervised the necessary drawing and parts identification changes.

REASON FOR THE FCR: The governors were returned to Woodward to eliminate the binding of the governor that had been experienced in previous testing.

SAFETY EVALUATION: The modifications were necessary to remove the adverse effect of the governor binding under certain conditions. The modification allows the pilot valve to overtravel allowing the pivot bearing to always remain in contact with the floating lever. This in turn removes the possibility that the turbine will be prevented by this binding from reaching design speed. This design improvement permits the Auxiliary Feed Pump to perform its intended safety function and removes a potential defect which could create a significant safety hazard.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-501

SYSTEM: Auxiliary Feedwater

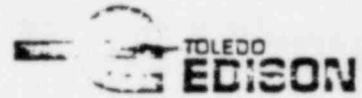
COMPONENT: Auxiliary Feed Pumps Turbines (AFPT) Governors

CHANGE, TEST, OR EXPERIMENT: On December 14, 1977, the installation of an oil lite bushing on the governors for both Auxiliary Feed Pump Turbines was completed. Woodward, the governor vendor supplied the material and supervised the installation. The governors were tested by running ten cycles on each AFPT.

REASON FOR THE FCR: The oil lite bushing was decided upon when binding where the speed setting shaft enters the receiver assembly was discovered.

SAFETY EVALUATION: The Auxiliary Feed Pump Turbine governor controls the speed of the turbine. This change, which adds a self-oiling bushing on the speed setting shaft, is to further decrease the probability that the AFPT governor will bind. This is a design improvement and hence the safety function of the Auxiliary Feedwater System will be enhanced.

Central Files



February 24, 1978

Docket No. 50-346
License No. NPF-3

Serial No. 1-14

JAMES S. GRANT
Vice President
Energy Supply
(419) 259-5232

Mr. James G. Keppler
Regional Director, Region III
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

Enclosed find two (2) copies of P-3-77-1, Report of Facility Change Tests, and Experiments Conducted Without Prior NRC Approval, for the required 1977 events.

Very truly yours,

A handwritten signature in cursive script, appearing to read 'J.S. Grant'.

JSG/JRL/ljk

Enclosure

cc: Dr. Ernst Volgenau, Director
Office of Inspection and Enforcement
Encl: 40 copies P-3-77-1

FEB 27 1978

*MR
G*

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-001

SYSTEM: Reactor Vessel

COMPONENT: Reactor Vessel Head "O"-Ring Clips

CHANGE, TEST, OR EXPERIMENT: New design "O"-Ring backing plates and "O"-Ring retainer clips were installed on the reactor vessel head. This work was completed on May 7, 1977.

REASON FOR THE FCR: The above change was made with the recommendation of and with the assistance of the reactor vendor, Babcock and Wilcox, in order to incorporate the improved design clip.

SAFETY EVALUATION: The new design clip recommended by Babcock and Wilcox performs the same function and fit as the old wire clip. The form is slightly changed in that the wire clip was replaced by a stamped metal clip. The stamped clip will perform its required function as well or better than the wire clip. The material specified, AISI TP-304, presents no problem in this application. Therefore, there are no unreviewed safety questions and no change was required to the Technical Specifications.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-002

SYSTEM: Safety Features Actuation System (SFAS)

COMPONENT: SFAS Channel 1 and 4 K03 Relays

CHANGE, TEST, OR EXPERIMENT: On May 11, 1977, work was completed which wired out unused contacts on the K03 relays in SFAS Channels 1 and 4. Work was completed per a Field Change Procedure (KGS136), supplied by and under the supervision of the vendor, Consolidated Controls Corporation.

REASON FOR THE FCR: These initially spare contacts will be used as part of the pressurizer heater control interlock, a licensing commitment to the NRC.

SAFETY EVALUATION: This modification to the SFAS does not affect the safety of this system for the following reasons:

1. Work was done under the Field Change Package KGS-136 which was prepared by Consolidated Controls Corporation under their QA program.
2. Isolation between the 1E sections of the circuits and non-1E sections of the circuit was performed in cabinets external to the SFAS cabinet.
3. No other safety functions of the SFAS will be affected by this modification.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-006

SYSTEM: Miscellaneous

COMPONENT: Control Room Vertical Panels

CHANGE, TEST, OR EXPERIMENT: On July 19, 1977, covers were fabricated and installed on the east and south ends of the vertical panels in the Control Room.

REASON FOR THE FCR: These panels were installed to close the east and south ends of these panels.

SAFETY EVALUATION: The added vertical panel covers will in no way affect the safety function of the Control Room panels, nor will the seismic qualification be affected.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-034

SYSTEM: Reactor Coolant System (RCS)

COMPONENT: Decay Heat Normal Suction Valve Controls

CHANGE, TEST, OR EXPERIMENT: On October 10, 1977, the control scheme of valve DH-12, Decay Heat (DH) Pump Suction Isolation Valve was modified in conformance with drawings E-52B, Sheet 24C, Revision P3 and E-52B, Sheet 24D, Revision 3. Bechtel Wiring Diagrams E-200B; E-221, Sheet 20; E-286; E-528; E-529; E-557A, Sheet 40A and 40B; and E-634B, Sheet 5 were revised to reflect the change. The valve was stroked from all control points after the modifications were completed to ensure operability.

REASON FOR THE FCR: This wiring change was completed to prevent inadvertent closure of DH-12 when power is removed and then restored to the control circuit. These closures were being caused by a contact racing condition when power was applied, a design deficiency within the control circuit. Closure of DH-12 isolates the RCS from the pressure relieving capacity of the normal cooldown relief valve in the DHR System. This could result in exceeding the pressure temperature limits on the primary system.

SAFETY EVALUATION: This change to the control scheme for valve DH-12 does not change the safety function of the interlock on the valve. The valve cannot be opened when the RCS pressure is above the setpoint on PSH-RC2B4. Also, if the valve is open and 480 V AC power is available to the valve operator, the valve will automatically close if the RCS pressure raises above the setpoint on PSH-RC2B4. This change only prevents the valve from inadvertently closing due to an auxiliary relay contact race when 480 V AC power is restored to the valve operator.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-041

SYSTEM: Safety Features Actuation System (SFAS)

COMPONENT: "SAM" Logic for AF 599

CHANGE, TEST, OR EXPERIMENT: This Facility Change Request was written to document the disconnecting of the wire used for the logic of a valve previously actuated by the SFAS. The Auxiliary Feedwater Discharge Valve to Steam Generator 2 (AF 599) logic was disconnected from the SFAS by lifting Wire W of Terminal Board TB 60-8 in Cabinet C 5756C.

REASON FOR THE FCR: The Auxiliary Feedwater Discharge Valve to Steam Generator 2 was removed from SFAS control. This Facility Change Request documented the spare cable and verified all drawing changes required were completed.

SAFETY EVALUATION: Valve AF-599 does not require a SAM light, as it is not closed with a safety actuation (SA) signal from SFAS. Redundant position indications have been provided (computer and indicating lights) using redundant position switches on this valve.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-079

SYSTEM: Radiation Monitoring System

COMPONENT: Radiation Detectors RE 5327 and RE 5328

CHANGE, TEST, OR EXPERIMENT: On November 25, 1977, noise suppression mufflers were installed on Control Room Ventilation Radiation Detectors RE-5326 and RE-5328. These mufflers were supplied by Victoreen, the radiation detector vendor and installed with their supervision.

REASON FOR THE FCR: This FCR was initiated to reduce the noise level in the Control Room caused by these radiation detectors. These detectors are solid piped to the ductwork which is conducive to sound transmittal to the ductwork.

SAFETY EVALUATION: The noise suppression mufflers perform no safety function nor do they affect the safety function of the associated radiation monitors. The investigation by Victoreen indicated that the seismic qualification for these radiation monitors was not invalidated by the installation of the mufflers. Therefore, the FCR does not involve an unreviewed safety question.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-108

SYSTEM: Electrical Penetrations

COMPONENT: Sealant Specifications

CHANGE, TEST, OR EXPERIMENT: The requirement for shielding type sealant material installed to a full two feet six inch depth in electrical penetrations as shown on Drawing E-378B, Sheet 1 and Bechtel Specification 7749-M-255 was changed to a depth of two feet, 0 inches of shielding sealant. The new specification also calls for sealing the insides of the conduits to a two feet depth.

REASON FOR THE FCR: The original specification and drawing were intended to be used to finish sealing of the penetrations and covering the exposed ends of the conduits not filled with sealant. However, the shielding sealant has been applied to a depth of two feet, 0 inches inside all conduits, and the sealant applied in this manner accomplishes the dual purpose of adequate personnel shielding and the establishment of a pressure boundary, making additional sealing unnecessary.

SAFETY EVALUATION: An analysis of the electrical penetration shielding property by the architect-engineer, Bechtel Power Corporation, indicated that a 2'-0" depth of SF-150 silicone foam will reduce gamma radiation by a factor of 1.85×10^4 and will reduce the neutron dose to less than 0.03 mr/hr. Therefore, the sealant applied in the manner described above provides adequate personnel radiation protection.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-119

SYSTEM: Diesel Generator Fuel Oil Transfer System

COMPONENT: Local Control Switches for Fuel Oil Pumps

CHANGE, TEST, OR EXPERIMENT: On August 16, 1977, work was completed which relocated the local control switches (NP 1, 1952) for the Diesel Generator Fuel Oil Pumps.

REASON FOR THE FCR: The initial installation location of these control switches was inaccessible. These switches are the only way to manually start or stop these pumps since there is no remote control station.

SAFETY EVALUATION: Relocation of the local control stations will not alter their function, which is to meet Technical Specification 4.8.1.1.2.a.3 (verifying that the fuel transfer pumps can be started and transfer fuel from the storage system to the day tank). The safety function of the fuel oil system is not altered by this facility change.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-120

SYSTEM: Nuclear Instrumentation

COMPONENT: Source Range Neutron Detectors NI-1 and NI-2

CHANGE, TEST, OR EXPERIMENT: On July 27, 1977, new cable was pulled in spare conduits 39035B and 39010D for Source Range Neutron Detectors NI-1 and NI-2. The necessary terminations were completed and the initial cables were spared.

REASON FOR THE FCR: This work was done to attempt to reduce the noise level by separation of the source range cable.

SAFETY EVALUATION: There will be no adverse impact on safety since the new cable installation will only change the cable routing.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-134

SYSTEM: Steam and Feedwater Rupture Control System (SFRCS)

COMPONENT: SFRCS Steam Generator Level Bistable Cabinets

CHANGE, TEST, OR EXPERIMENT: On July 9, 1977, work was completed which added capacitors to the four SFRCS Steam Generator Level Bistable Cabinets. This work was performed per a vendor supplied Field Change Package (Consolidated Controls Corporation Field Change Package KHD 136).

REASON FOR THE FCR: This change was necessary to filter the "noise" from the analog input to these cabinets. The noise was coming from the field wiring and the level transmitters.

SAFETY EVALUATION: This change will not affect the safety or seismic qualification of these steam generator level bistable cabinets. Also, the response time of steam generator level instrumentation will remain within the total response time required by the SFRCS. Therefore, the safety of the SFRCS will not be affected.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-139

SYSTEM: Steam and Feedwater Rupture Control System (SFRCS)

COMPONENT: Terminals on the SFRCS Cabinets C5762A and C5792

CHANGE, TEST, OR EXPERIMENT: On September 9, 1977, studs were installed on the field wiring side of Terminal Block TB 11, Terminals 9, 10, 12 and 13 in SFRCS Cabinets C5762A and C5792. These studs were installed with a locknut to facilitate the placement of jumpers on these terminals.

REASON FOR THE FCR: During the performance of Surveillance Test ST 5031.14, the "SFRCS Monthly Test", startup feedwater valves SP7A and SP7B control signal must be disabled by jumpering these contacts. The initial installation consisted of screws at these terminals which would not allow jumpering without disrupting the circuit continuity, tripping the startup feed water valves.

SAFETY EVALUATION: The addition of the studs to ther terminals is only for the purpose of conducting the SFRCS Monthly Test. This change will have no effect on the functioning of the system, and hence no impact on facility safety.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUEST

FCR NO: 77-147

SYSTEM: Control Rod Drive Control (CRDC) System

COMPONENT: Asymmetric Runback

CHANGE, TEST, OR EXPERIMENT: On September 12, 1977, work was completed on the Control Rod Drive Control System to modify the asymmetric runback function of the CRDC. The asymmetric runback to 60% of full power was revised so that both an asymmetric rod condition and an in-limit occur in order to initiate the automatic runback. The work was completed and tested per Babcock and Wilcox Field Change Package #69.

REASON FOR THE FCR: This was to prevent unnecessary runbacks to 60% of full power.

SAFETY EVALUATION: Only the trip portion of the CRDCS is Q-listed. Since this change does not affect the trip portion of the CRDCS, an unreviewed safety question is not involved.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-150

SYSTEM: Core Flood System

COMPONENT: Core Flood Injection Line Check Valves, Bechtel No. B3-3 and B3-4

CHANGE, TEST, OR EXPERIMENT: On August 15, 1977, Bechtel Specification 7749-M-212, and Velan Valve Drawing DUO-166-S were revised to reflect "as built" conditions. The nipples and caps welded to Core Flood Valves Injection Line Check Valves CF31 (Bechtel No. B3-3) and CF30 (Bechtel No. B3-4) were SA-479-316 rather than SA-182-F304 as required by the specifications.

REASON FOR THE FCR: To reflect "as built" conditions.

SAFETY EVALUATION: The change of the nipple and cap material from SA-182-F304 (as required by Specification M-212) to SA-479-316 will have no effect on the functioning of the Core Flood Valves and hence no effect on the safety of the system.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-151

SYSTEM: Component Cooling Water System

COMPONENT: Component Cooling Water Heat Exchangers

CHANGE, TEST, OR EXPERIMENT: The requirement for a stress report on the Component Cooling Water Heat Exchangers was deleted from Bechtel Specification 7749-M-23, Form ED-6058.

REASON FOR THE FCR: ASME Code Section VIII does not require such a report and the report was not available.

SAFETY EVALUATION: This Facility Change Request changes Specification 7749-M-23, Form ED-6058 in particular, to reflect the actual documentation requirements of Section VIII of the ASME Code. An unreviewed safety question is not involved.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-152

SYSTEM: Emergency Ventilation System

COMPONENT: Energy Pipe Break Blowout Panels Pressure Setpoint

CHANGE, TEST, OR EXPERIMENT: On July 16, 1977, work was completed which increased the blowout setpoint of the negative pressure boundary high energy break blowout panels from .5 psid to 1.0 psid. This change was implemented on all thirteen panels.

High energy line breaks were re-analyzed in the areas of the Auxiliary Building affected by the change in the relief points. It was determined that peak pressures resulting from any of these breaks were consistently below the design limits in the affected areas.

REASON FOR THE FCR: A Field Quality Control Engineer employed by Bechtel (the architect/engineer for Davis-Besse Unit 1) asked for comparison of the set pressure of the blowout panels to the pressure calculated to occur on the panels under a Loss of Coolant Accident (LOCA) condition. The subsequent Bechtel investigation showed the blowout panels were designed to blowout at 0.5 psid which is less than the 0.8 psid that was calculated to occur after a LOCA. These blowout panels are part of the negative pressure boundary wall and were installed to protect the penetration rooms from overpressurization if a steamline or feed-water break would occur. These panels should have been designed not to blowout under LOCA pressure conditions.

SAFETY EVALUATION: The increase in the relief point of the blowout panels to 1.0 psid will not change the analyses associated with a LOCA. The peak pressures in the areas of the Auxiliary Building affected by this change in the relief point are still below the design limits (Table 3-6 aa of the FSAR, Compartment Pressurization).

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-158 and 77-159

SYSTEM: Miscellaneous Piping

COMPONENT: Miscellaneous Piping Specifications M-190 and M-601

CHANGE, TEST, OR EXPERIMENT: Specification M-190 and M-601 were changed to permit the use of previously installed unions, screwed fittings, screwed pipe, and stainless steel pipe and swagelock fittings in class GCB, HBD, HSC piping.

REASON FOR THE FCR: Piping class sheets in Specifications M-190 and M-601 did not allow the use of some installed piping specified in Bechtel Non-Conformance Reports 1222, 1223, 1224, 1225, 1226, 1228, 1229 and 1230:

SAFETY EVALUATION: This change permits the use of unions, screwed joints, swagelock fittings and stainless steel material on certain HBD lines (150 lb, carbon steel, ANSI B31.1.0) as shown on Notes 10 and 11 of M-601, Sheet 27; unions on GCB-8 lines (300 lb, stainless steel, ASME Section III, Class 2) as shown on Note 4 of M-601, Sheet 17; and unions on HSC-77 lines (150 lb, stainless steel radwaste, ASME Section III, Class 3), that is shown on Note 3 of M-601, Sheet 38. These screwed connections and materials are permitted by the applicable codes and standards and will not adversely affect the safety function of the systems to which these lines are connected.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-160

SYSTEM: Instrument AC Power

COMPONENT: Fuse Ratings for the Containment Hydrogen Analyzers

CHANGE, TEST, OR EXPERIMENT: On December 29, 1977, Bechtel Electrical Drawing E-641A, Sheets 1A and 2A were revised to show the fuse ratings for the Containment Hydrogen Analyzers (circuit Y119 and Y218) as 10 amps and the load rating as 5 amps.

REASON FOR THE FCR: This Facility Change Request was issued to correct a drawing error. With one hydrogen dilution pump and analyzer in operation, each channel exceeded the capacity of the previously installed 4 amp fuse.

SAFETY EVALUATION: The changing of the fuse size in these cabinets will in no way adversely affect the safety function or seismic qualification of these panels or the containment hydrogen analyzer.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-166

SYSTEM: Emergency Diesel Generators

COMPONENT: Fuel Oil Supply Lines

CHANGE, TEST, OR EXPERIMENT: A 1/2 inch thick steel load distribution plate was added over the top of the two 1½"-HB C-86 supply lines from the Emergency Diesel Generator Fuel Oil Storage Tanks (T153-1, and T153-2).

REASON FOR THE FCR: The existing structural backfill did not meet the missile protection requirements shown on Drawing 7749-C-37, Revision 9 (Bechtel Non-Conformance Report 1232) which required 3½ feet of backfill.

SAFETY EVALUATION: The original structural backfill design required 3'-6" minimum cover for missile protection of the 1½"-HBC-86 (supply line). The revised design provides equal or better missile protection in that it employs both a 1/2" steel plate and 21" of backfill over the supply lines. Therefore, the Facility Change Request involves no adverse effects on the functioning of the emergency diesel generator system.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-167

SYSTEM: Steam Generator

COMPONENT: Steam Generator Level Instrumentation Cabinet 9N41

CHANGE, TEST, OR EXPERIMENT: On July 25, 1977, work was completed by Instrument and Control Personnel which modified 24 volt and 15 volt power supplies (PL9N41-18 and 19) for A.C. input operation. Work was completed and tested per Field Change Procedure KHN136 supplied by the vendor, Consolidated Controls Corporation.

REASON FOR THE FCR: This FCR was performed to correct a design error. The initial 15 and 24 volt power supplies did not operate properly on A.C. voltage supply.

SAFETY EVALUATION: This change to modify the power supplies for AC input operation does not adversely affect the operation of the Steam Generator level instrumentation. The change has been designed by the original equipment supplier and approved by Bechtel as adequate for the intended service.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-181

SYSTEM: Sampling System

COMPONENT: Nuclear Area Sampling

CHANGE, TEST, OR EXPERIMENT: Piping and Instrument Diagrams M-031, M-037A, M-039, and M-040A were revised to show the secondary root valves that exist on the Nuclear Area Samples. No physical work was required. Only the drawings were revised to document the double valves as they exist.

REASON FOR THE FCR: The reason for the drawing change was to clarify the piping and instrument diagrams to prevent misinterpretation of the valve lineup required.

SAFETY EVALUATION: These piping and instrument diagram changes will not affect the function of the system and do not involve an unreviewed safety question. The normally shown valve positions reflect operating procedures which consider high radiation in the area of some of the sampling system valves.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-182

SYSTEM: High Pressure Injection (HPI) System

COMPONENT: HPI Lube Oil Pumps Wiring Diagram E52B

CHANGE, TEST, OR EXPERIMENT: The HPI Lube Oil Pumps, Bechtel Wiring Diagram E52B, Sheets 63 and 64, were revised to correct an error on the drawings. The local switches were changed to show the normally open contacts and Note 3 was changed to "PDS contact opens on flow from the A.C. Pump and closes to start the D.C. Pump when flow is lost from the A.C. Pump".

REASON FOR THE FCR: The drawings were revised to correct a drawing error.

SAFETY EVALUATION: The subject drawing changes are needed to reflect "as-built" conditions and do not affect the ability of the equipment to perform its safety function.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-188

SYSTEM: Spent Fuel Pool Cooling

COMPONENT: Refueling Canal

CHANGE, TEST, OR EXPERIMENT: Bechtel Piping and Instrument Diagram 7749-M-035 was revised to indicate the actual capacity of the refueling canal as 388,000 gallons. Prior to this revision, the capacity was incorrectly given as 355,000 gallons.

REASON FOR THE FCR: To correct an earlier capacity calculation.

SAFETY EVALUATION: This FCR changes Piping and Instrument Diagram M-035 to reflect the actual capacity of the refueling canal. Decay heat from stored fuel is removed by two pumps and two heat exchangers. Spent fuel pool water temperature is automatically controlled by temperature controllers, which are not affected by the total amount of water in the Spent Fuel Pool. Boron concentration in the Spent Fuel Pool is maintained to equal to or greater than the boron concentration in the refueling canal (1800 ppm) during refueling operations. Therefore, the safety function of the system is not altered by this change.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-196

SYSTEM: A.C. Instrument Power

COMPONENT: Inverter YV1

CHANGE, TEST, OR EXPERIMENT: On September 7, 1977, modifications were made to Essential Instrument A.C. Power Supply Inverter YV-1 to perform a test on inverter operation during short circuits at various phase angles. This was done to verify the modification was in conformance with Bechtel Specification 7749-E-20 prior to permanent implementation. Testing was completed and inverter YV-1 restored to pre-test status.

REASON FOR THE FCR: In May, 1977, difficulties with current limiting in Inverters YV-1 and YV-2 led to investigation by the vendor, Cyberex. This test was done as part of the investigation of these difficulties.

SAFETY EVALUATION: The procedure which specifies the Inverter YV-1 modification and testing stipulates that Channels 2, 3 and 4 of essential 120 volt AC instrumentation panels are energized from their normal source. Channel 1 panel during the modification and most of Inverter YV-1 testing is energized from its alternate source. These conditions are allowed by Technical Specification. Therefore, for the period of time covered by the above conditions, there is no nuclear safety problem.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-199

SYSTEM: Auxiliary Feedwater

COMPONENT: Auxiliary Feed Pumps Speed Control Circuits

CHANGE, TEST, OR EXPERIMENT: On August 17, 1977, two additional relays were wired in on each Auxiliary Feed Pump Control Circuit. The affected drawings, 7749-E-285, 7749-E-289 Sheet 1, 7749-E-045B Sheet 11A will be revised to reflect the above change.

REASON FOR THE FCR: It appeared that the original relays did not have a high enough current capacity to operate the speed changer motor. In an attempt to remedy this problem, the above change was made. In retrospect, this change did not solve the speed control circuit difficulty. Facility Change Request 77-221 located and resolved the circuit deficiency.

SAFETY EVALUATION: These two new contacts split the current carried by the original lone relay. This change does not change the speed control function of this circuit. Therefore, it will not degrade the safety of the unit.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-200

SYSTEM: Auxiliary Feedwater

COMPONENT: Auxiliary Feedwater Pumps 1 and 2

CHANGE, TEST, OR EXPERIMENT: On December 14, 1977, work was completed which removed the dynamic braking resistors from the speed control circuits of both Auxiliary Feedwater Pump Turbines.

REASON FOR CHANGE: The originally installed resistors had a power rating which was too low. This caused the resistors to overheat and fail.

SAFETY EVALUATION: The dynamic braking resistor was installed to reduce the RPM/pulse change. This is pump RPM change (either increase or decrease) per speed change demand pulse from Steam Generator (SG) level error signal.

Elimination of the dynamic braking resistor from the control circuit will not impair the safety system design function of maintaining Steam Generator level with the Auxiliary Feed Pump. Test results during Hot Functional Testing (HFT) in December 1976/January 1977 and during mini HFT of August 1977 reveal that without the resistor and with a shorted (zero ohm) resistor, the SG level was maintained using the Auxiliary Feed Pump.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-217

SYSTEM: Various Power Supplies

COMPONENT: Various

CHANGE, TEST, OR EXPERIMENT: On October 4, 1977, work was completed as follows:

1. The time delay of the undervoltage relays set at 90% of 4.16 kV safety related bus voltage would be changed from 10 seconds to 9 seconds and the time delay of the diesel generator breaker was changed from 1 second to .5 second.
2. An additional overvoltage alarm setpoint on the 4.16kV safety related bus was added.
3. Overcurrent relay setpoints for safety related 4kV motors was revised.
4. The 1 amp fuses in the secondary of the control power transformers located in all safety related and non-safety related motor control centers was changed to 2.5 amp slow blow fuses.
5. The undervoltage alarm setpoints of the plant were reset to further enhance the coordination between the alarm system and the protective system.

The affected drawings are identified by the FCR and will be revised.

REASON FOR THE FCR: The reason for the above changes was to meet commitments to the NRC contained in Toledo Edison Letter No. 293 (dated July 18, 1977). These changes remove the station from the voltage restriction condition 2.c.(3)(q) of the operating license.

SAFETY EVALUATION: These modifications have previously been evaluated by the NRC by the submittal of Toledo Edison Letter No. 293.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-231

SYSTEM: Main Steam

COMPONENT: Main Steam Isolation Valve (MSIV) MS-100 and MS-101

CHANGE, TEST, OR EXPERIMENT: The reason for this Facility Change Request was to approve the bypassing of the instrument air line filter with copper tubing. This work was performed by Maintenance personnel with verbal approval of Power Engineering on August 15, 1977. Also, Drawing 7749-M-304-6 Revision 11 was issued to reflect this condition.

REASON FOR THE FCR: The plastic cover of the instrument air line filter failed at the threads. This component failure caused a loss of instrument air to the valve which closes (fails safe) without air pressure acting on the operator. See Licensee Event Report NP-33-77-55 for further details.

SAFETY EVALUATION: The filters were not necessary since the air supply is instrument air which is dry and clean. By replacing the filter with tubing, the possibility of the MSIV inadvertently closing due to failure of the filter is eliminated.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-251

SYSTEM: Emergency Diesel Generators

COMPONENT: Emergency Diesel Generator Fuel Oil Transfer Pumps

CHANGE, TEST, OR EXPERIMENT: This FCR was issued to revise Bechtel Drawing FSK-M-888 to show the recirculating siphon break piping on both Emergency Diesel Generator Fuel Oil Transfer Pumps.

REASON FOR THE FCR: The drawing was changed to reflect the "as built" condition. No physical change was completed.

SAFETY EVALUATION: The drawing change per this FCR reflects piping added of equal class for this siphon break. The design requirements of the system are not altered.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-307

SYSTEM: Main Steam

COMPONENT: Main Steam Safety Valves

CHANGE, TEST, OR EXPERIMENT: On October 26, 1977, work was completed which modified the main steam safety valve drain lines and associated supports. Additional supports were installed to prevent damaging piping reactions during relief valve actuations. All affected drawings were revised to reflect the modifications.

REASON FOR THE FCR: The changes to the supports and piping was made to prevent the drain lines from being damaged when the safety valves relieve as had previously occurred.

SAFETY EVALUATION: Revising the main steam safety valve drain line supports will not adversely affect the functioning of this system.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-327

SYSTEM: 480 Volt Motor Control Centers (CC) E11C and F11A

CHANGE, TEST, OR EXPERIMENT: On October 6, 1977, molded case breaker settings were verified to be set correctly for breakers BE 1168 and BE 1150 on MCC E11C and BF 1114 on MCC F11A. The breakers BF 1114 and BE 1168 supply containment lighting. Breaker BE 1150 is the feed to MCC E11E.

REASON FOR THE FCR: This was a new installation which required verification of the breaker setting.

SAFETY EVALUATION: Only one change applies to "Q" listed circuitry, that is on Breaker BE 1150 on MCC E11C

This change is required to permit proper coordination. This change in no manner adversely affects safety aspects of Davis-Besse Unit 1.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-406

SYSTEM: Decay Heat/Low Pressure Injection

COMPONENT: Decay Heat Isolation Valve Pit Watertight Cover

CHANGE, TEST, OR EXPERIMENT: On November 8, 1977, Revision 9 of Bechtel Drawing C-635 was completed which reflected the "as-built" condition of the Decay Heat Valve Pit Watertight Cover on Valves DH 11 and DH 12.

REASON FOR THE FCR: The reason for this change was to make the drawing coincide with the "as-built" condition.

SAFETY EVALUATION: The installed fasteners, 1/2" carbon steel bolts partially welded around the underside of the flange, provide equal or greater holddown capacity compared to originally designed 3/8" carbon steel studs. The function of the valve pit cover is to prevent water leakage into the valve pit rendering inoperable the decay heat valves DH 11 and DH 12. Because the watertight seal is provided by a silicone rubber gasket compressed around this removable panel, the safety functioning of this equipment is not adversely affected by this facility change.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-417

SYSTEM: Control Rod Drive Control System (CRDCS)

COMPONENT: Undervoltage Trip Units

CHANGE, TEST, OR EXPERIMENT: The originally supplied undervoltage trip units on all four CRDCS trip breakers were replaced with trip units of identical identification and function. After the replacement units were installed, testing of the breakers demonstrated the proper operation of the undervoltage trip devices.

REASON FOR THE FCR: As a result of General Electric (the device manufacturer), and Diamond Power (the CRDCS vendor), investigation into delayed opening problems at other utilities, it was recommended that the original undervoltage trip units be replaced.

SAFETY EVALUATION: The originally supplied undervoltage trip units on all four control rod drive control system trip breakers were replaced with trip units of identical identification and function. The original General Electric supplied undervoltage trip units may have been manufactured incorrectly and may have not performed their intended function. The batch of trip units that were incorrectly manufactured could not be positively identified by the marking on the trip unit. However, a physical inspection would immediately identify the unit as being defective. Because a physical inspection of the trip unit would require that it be removed from the circuit breaker, it was decided that the unit be totally replaced with a known correctly manufactured unit. After the replacement units are installed, testing of the undervoltage trip circuits of the circuit breakers further demonstrated that the new trip units are operating properly. Because the original suspect undervoltage trip units are to be replaced with identical properly manufactured trip units, no adverse affect on safety exists.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-450

SYSTEM: Auxiliary Feedwater

COMPONENT: Auxiliary Feed

CHANGE, TEST, OR EXPERIMENT: On November 22, 1977, work was completed which installed a spring to the upper valve lever and to the lower support bracket on both Auxiliary Feed Pumps Turbine Governors. The spring which was provided with a tension adjustment should balance the governor intake. Terry Turbine, the turbine vendor supplied the parts and supervised the installation.

REASON FOR THE FCR: Vibrational closure of Auxiliary Feed Pump 1-2 Governor Valve had occurred rendering the Auxiliary Feed Pump inoperable. Since there was no force except friction to hold the valve open in the original design, the gravitational forces combined with the vibrational forces caused the valve to close. This spring should prevent vibrational closure.

SAFETY EVALUATION: The Auxiliary Feed Pump Turbine Governor Valve controls the speed of the turbine. This change, which adds a spring between the upper valve lever and the lower support bracket of the governor, will alter the linkage such that vibration should not close the AFPT governor valve. This is a design improvement, because the governor valve will remain open when it should be open, even in the presence of vibration. Therefore, the safety function of the Auxiliary Feedwater System will be enhanced.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-451

SYSTEM: Auxiliary Feedwater

COMPONENT: Auxiliary Feed Pumps Turbines Governors

CHANGE, TEST, OR EXPERIMENT: On October 6, 1977, a modification was completed on both Auxiliary Feed Pump Turbine Governors by the vendor, Woodward Governor. The work was done at the Woodward facilities with manufacturing, assembling, and testing done by Woodward. Terry Turbine, the turbine vendor, witnessed the test and supervised the necessary drawing and parts identification changes.

REASON FOR THE FCR: The governors were returned to Woodward to eliminate the binding of the governor that had been experienced in previous testing.

SAFETY EVALUATION: The modifications were necessary to remove the adverse effect of the governor binding under certain conditions. The modification allows the pilot valve to overtravel allowing the pivot bearing to always remain in contact with the floating lever. This in turn removes the possibility that the turbine will be prevented by this binding from reaching design speed. This design improvement permits the Auxiliary Feed Pump to perform its intended safety function and removes a potential defect which could create a significant safety hazard.

SUMMARY OF 1977 COMPLETED FACILITY CHANGE REQUESTS

FCR NO: 77-501

SYSTEM: Auxiliary Feedwater

COMPONENT: Auxiliary Feed Pumps Turbines (AFPT) Governors

CHANGE, TEST, OR EXPERIMENT: On December 14, 1977, the installation of an oil lite bushing on the governors for both Auxiliary Feed Pump Turbines was completed. Woodward, the governor vendor supplied the material and supervised the installation. The governors were tested by running ten cycles on each AFPT.

REASON FOR THE FCR: The oil lite bushing was decided upon when binding where the speed setting shaft enters the receiver assembly was discovered.

SAFETY EVALUATION: The Auxiliary Feed Pump Turbine governor controls the speed of the turbine. This change, which adds a self-oiling bushing on the speed setting shaft, is to further decrease the probability that the AFPT governor will bind. This is a design improvement and hence the safety function of the Auxiliary Feedwater System will be enhanced.