

ENCLOSURE (1)
SUMMARY OF MODIFICATIONS, CHANGES AND EXPERIMENTS
IMPLEMENTED AT JAFNPP DURING 1984

JAF-SE-83-001, Modification M1-83-005

This modification provided an upgrade of the Safety Relief Valve acoustical valve monitoring system signal conditioner to the latest generation signal conditioner module (P22MHA-1V) as recommended by the equipment vendor. This modification involved minor circuitry wiring changes and the addition of six (6) electronic components.

JAF-SE-83-015, Modification M1-83-004

This modification covered a total of 19 valve operators. New motors were installed on six of the valve operators. The other 13 valve operators had their motors, as well as the torque switches and the limit switches replaced with new units. The new components meet IEEE Stds. 323-1974 and 344-1975. This modification was performed for environmental qualification purposes.

JAF-SE-83-021

A shield plug used as an invessel work platform is stored onsite as radioactive material. The shield plug became contaminated as a result of work being done inside the reactor vessel on the feedwater spargers. After use, the shield plug was decontaminated to the lowest practical levels. After decontamination, the shield plug was painted to assure that the fixed contamination would not become loose. The shield plug was surveyed, labeled as radioactive material, and stored onsite within the protected areas. The safety evaluation is needed to comply with the recommendations of IE Circular No. 80-18 "10CFR50.59 Safety Evaluations for Changes to Radioactive Waste Treatment Systems". This safety evaluation complies with 10CFR20.

JAF-SE-83-022

A waste oil storage tank is stored onsite as radioactive material. The waste oil tank became contaminated as a result of leakage from the Auxiliary Boiler Room. The waste oil storage tank was surveyed, labeled as radioactive material, and stored on site within the protected areas. This safety evaluation is needed to comply with the recommendations of IE Circular No. 80-18 "10CFR50.59 Safety Evaluations for Changes to Radioactive Waste Treatment Systems". This safety evaluation complies with 10CFR20.

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JAF-SE-83-024, Modification Fl-82-037

This plant modification involved routing the Condensate Receiver Unit (CRU) vent lines to the radwaste equipment vent system. In order to eliminate steam from the vent line, a condensate cooler was installed, upstream of the CRU, to keep condensate temperatures below 200°F. This modification was necessary in order to provide adequate vent capacity for the condensate receiver unit while keeping radioactive discharges below the limits set forth in 10CFR20.

JAF-SE-83-025, Modification Fl-78-039

This plant modification involved the addition of seven (7) new piping restraints in a portion of the Turbine Building Closed Loop Cooling Water System (TBCLCWS) piping on the downstream side of the TBCLCW two heat exchangers. This modification deleted two (2) existing supports to facilitate the new restraint installations. This modification was required to reduce the lateral vibration of the existing TBCLCW piping system in the areas examined.

JAF-SE-83-026

This safety evaluation covered Indoctrination and Training Procedure No. 5, "Licensed Operator Requalification" that has been revised to incorporate the INPO Guidelines for Licensed Operator Requalification.

JAF-SE-83-032, Preoperational Test 03C

This preoperational test involved the operational steps and pressure adjustments necessary to place the new Control Rod Drive pump suction line into service. The new suction flow, which feeds directly from the condensate header downstream of the filter demineralizers, is controlled by the pressure control valves 03-PCV-204.

JAF-SE-83-041, Modification M1-83-041

This modification involved capping off both ends of two (2) antisiphon lines on top of the Main Turbine Systems Electric Hydraulic Control cooler discharge head loops. This modification was done as a result of a recommendation from the General Electric Corp. to improve the operation of Pump 94-P-7B. Pump 94-P-7B was responding to pressure changes too slowly causing large pressure swings in the system.

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JAF-SE-83-043, Modification M1-83-028

This modification involved a material substitution for the dog shafts of the Feedwater Non Return Valves 34-NRV-111A & B. The new material ASTM A-564 type 630 has superior strength and ductility values than the original material ASTM A-276 type 410.

JAF-SE-83-044, RHR SW Radiation Monitors 17RM-457 A & B

This safety evaluation was performed to assure that changing the description for monitoring Residual Heat Removal (RHR) service water to the normal service water monitor did not present an unreviewed safety question. The proposed change to the facility description is the removal of the RHR service water monitors from section 7.12.4 of the FSAR.

JAF-SE-83-045, Modification M1-83-029

This modification involved a material substitution for the High Pressure Coolant Injection system pressure seal gaskets of 23MOV-14, 15, 16 and 24. The new material ASTM A-519 grade 1015/1018, 110 BHN Max. has equal tensile strength, yield strength, and % elongation values as the original material silverplated armco iron, 90 BHN max.

JAF-SE-83-046, Modification F1-83-032

This plant modification involved the replacement of the 125V DC Station Battery and a retrofit to the battery rack. The new battery is of the same type and manufacturer as the original battery, but of a larger capacity. Additional bracing was added to the battery rack to meet the current requirements for Class 1E electrical equipment.

JAF-SE-83-047, Modification F1-83-033

This plant modification consisted of installing 8" x 8" tubesteel stanchions north and south of the Emergency Diesel Generator Silencers on the EDG Building roof. This modification provided additional lateral restraints to EDG silencer exhaust piping. This assures that the EDG piping will not be rendered inoperable by tornado or hurricane wind loading.

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JAF-SE-83-048, WR-17/11335

An interim dose assessment system was installed using meteorological data acquired from Nine Mile Point I and JAF meteorological towers. This interim system includes telephone access to an off-site computer for calculation of release dose rate assessment. This modification also replaced the existing recorders in the Control Room EMRP Panel with new recorders and a demultiplexer. A computer terminal and video screen for computer access was installed near the EMRP Panel and in the Technical Support Center.

JAF-SE-83-049, Service Air System Contamination

This safety evaluation was necessary to comply with the recommendations of IE Circular Number 80-10 "Contamination of Non-Radioactive System and Resulting in Potential for Unmonitored, Uncontrolled Release of Radioactivity to the Environment". As a result of radwaste system operations, the plant service air system became contaminated with radioactive material. The service air system is not designed to contain radioactive material. The cause of the contamination was an operator initiated cross tie between the service air system and the condensate transfer system. Draining was initiated immediately upon identification of water in the system.

JAF-SE-83-055, Pre-Operational Test 100A

This test was done to ensure the proper operation of the new Foxboro Specification 200 Class IE instrument power supplies and instrumentation modules in Panels 9-24 and 9-25 installed as part of Plant Modification No. F1-83-001.

JAF-SE-83-058, Modification M1-83-062

This modification consisted of converting the Turbine Generator control valves and EHC control valve circuitry from partial arc admission to full arc admission. The control valves were modified to allow them to stroke together with the same open end stem lift. Under full arc admission, steam is evenly distributed around the first stage of the High Pressure turbine, thus reducing the possibility of fatigue damage.

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JAF-SE-83-059, Modification M1-83-042

This modification involved replacing the existing Class 1E, Reactor Recirculation Flow Transmitters (Barton's) with new Foxboro Transmitters. The new transmitters provide a more reliable signal to the flow units for use in generating the flow bias signal to the Average Power Range Monitors and Rod Block Monitors.

JAF-SE-83-066, Rev. 1, Modification M1-83-046

This modification involved a cosmetic change to the Administration Building offices. All the walls removed were divider walls and not load bearing walls. The walls, partitions and other minor architectural changes do not contribute any significant loading to the floors.

JAF-SE-83-069, Modification F1-78-020

This modification involved the installation of a new de-excitation circuit for removing excitation from the main generator field. This circuit is used as an alternate means to the existing field breaker for generator field de-excitation.

JAF-SE-83-072, Pre-Operational Test 01-107B

This preoperational test verified that the Stack Particulate Monitoring System Cabinet, associated piping and valves, and the electrical system for the Post Accident Sampling System for Radioiodines and Particulates functioned correctly. This test ensured that the sampling equipment was capable of collecting and analyzing representative samples of radioiodines and particulates in plant gaseous effluents during and following an accident of activity concentration of 100 micro Ci/cc deposited on sampling media with 30 minutes sampling time. The reason for this modification F1-82-050 was to comply with the requirements stated in NUREG-0737 Item II. F.1.2.

JAF-SE-83-076, Modification M1-83-050

This modification consisted of the replacement of main steam line drain valves for improved operational performance and maintenance reasons. Velan Type W-376 was replaced by Rockwell International Univalve Type 36124.

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JAF-SE-83-078, Pre-Operational Test 71M

This preoperational test verified the correct operation of the new de-excitation circuit as designed and installed by plant modification F1-78-020. This test verified the operation of de-excitation relay 41A and indicating lights on the front door of Generator Excitation Switchgear.

JAF-SE-83-079, Modification M1-83-052

This modification involved replacing the Class 1E Crescent Area Unit Cooler fan motors. The new motors are of the same type, horsepower, and RPM, but have an insulation rating which is superior to the original motors. These replacement motors are fully qualified to JAF environmental conditions during postulated accidents.

JAF-SE-83-081, Modification M1-83-056

This modification involved replacing the Loyola BPAC-3 Control Room Heater Controller with a new design, the Loyola Controller DPAC-3. Minor rewiring was necessary for the installation of the new unit.

JAF-SE-83-083, Modification F1-83-054

This plant modification consisted of the removal of redundant control capability for the Crescent Area Unit Coolers. The local control functions for the Crescent Air Unit Coolers 66UC-2A thru K were removed from Control Panels 66HV-3A and 3B on level 272' in the Reactor Building. This modification was done for environmental qualification reasons. The primary controls for the unit coolers are on the 09-75 Panel in the Control Room, and the local control capability is not required.

JAF-SE-83-084, Rev. 1, Modification F1-83-041

This plant modification involved replacing the existing gear and pinion for the inboard and outboard isolation valves on the Reactor Water Cleanup and Reactor Core Isolation Cooling Systems high energy lines in the Reactor Building. The new gear and pinion decrease the stroke time for the valves. The decrease in operating time will provide earlier isolation for postulated High Energy Line Break accidents, and thereby contribute to lowering the calculated temperature transients in the Reactor Building subsequent to these postulated accidents.

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JAF-SE-83-086, Modification Fl-81-036

This plant modification involved the relocation of the LPCI Keep Full Level switches to the RHR system pump discharge piping at each of the high points in the system. This modification was done to eliminate air from the system to prevent water hammer when the RHR pumps are started-up.

JAF-SE-83-087, Modification M1-83-051

This modification consisted of installing an orifice type flow element in feedwater line #8"-W-902A-24C upstream of 34FCV-137 and a differential pressure transducer to permit periodic monitoring of the flow rate. The existing flow control valve 34FCV-137 has been modified to provide close regulation at low flow rates. This modification complies with NUREG-0619 requiring that at less than 10% of rated feedwater flow, the flow variations be kept below certain limits.

JAF-SE-84-004, Modification M1-84-001

This modification involved substituting a Limitorque SMB-0-40 (40 foot-lb) actuator for the original design SMB-0-25 actuator. The delivered torque, stroke time, and environmental qualification of the replacement valve actuator have been evaluated and meet the applicable design requirements for the suppression pool spray isolation valve 10MOV-39B.

JAF-SE-84-005, Modification Fl-83-059

This modification involved performing Induction Heating Stress Improvement (IHSI) for eleven joints on the Reactor Recirculation System piping. The IHSI process was performed in order to reduce or eliminate the probability of Intergranular Stress Corrosion Cracking (IGSCC). IHSI involved a controlled process where the outer surface of the pipe is heated to a specific temperature by the use of an induction heating coil while simultaneously the inner surface is cooled by water flow through the pipe, causing a large temperature difference between the outer and inner surface. The outer diameter temperature produces sufficient thermal stress to induce plastic flow and consequently produce a compressive residual stress in the inner surface of the pipe. The induced compressive stress will reduce the probability of IGSCC initiation and curtail crack propagation of initiated cracks in the treated weld heat affected zone.

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JAF-SE-84-006, Modification Fl-83-034

This plant modification involved modifying the Automatic Depressurization System (ADS) Actuation Logic by deleting the high drywell pressure permissive for ADS actuation and by installing manual inhibit (override) switches. This modification was done to meet the requirements of NUREG-0737, Item II.K.3.18.

JAF-SE-84-007, Rev. 1, Modification Fl-83-060

This plant modification involved a weld overlay process by which weld metal is deposited circumferentially around the outside diameter of a pipe in a predetermined axial length and radial thickness. This provides sufficient supplemental strength to a weld area with a flow of known size to re-establish the original structural design margin and allow continued operation. Weld overlay is an acceptable interim repair method for the cracks that were discovered during examinations associated with ISI and performance of Induction Heating Stress Improvement.

JAF-SE-84-008, Modification M1-84-002

This modification consisted of installing a new tappet assembly and piston in the HPCI turbine overspeed trip mechanism. The new components are made of a urethane material, which is more wear-resistant. This equipment improvement modification was designed by General Electric and the HPCI turbine manufacturer (Terry).

JAF-SE-84-011, Modification Fl-83-049

This plant modification involved installing a low point drain on the low pressure sensing lines of torus water level transmitters 23-LT-201B and C. The presence of the accumulated water in the "low side" of the transmitter caused the indicated level to appear lower than the actual water level. This condition has been rectified by addition of the low point drain which assures that the dry leg of the transmitter is kept dry.

JAF-SE-84-012, Heavy Load Analysis

The safety evaluation analyzed the required heavy lifts for the Equipment to be used for the Induction Heating Stress Improvement (IHSI). The equipment setup for the IHSI Program required lifting the IHSI components from the rail car to the floor in the Southeast equipment hatch of the Reactor Building prior to IHSI implementation. The second lift was for the movement of the pumps station assembly and reservoir tank from the 272' level to the 300' level.

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JAF-SE-84-013, Pre-Operational Test 66B

This test was done to verify the proper operation of all control, monitoring, and alarm functions for Crescent Area Unit Coolers 66UC-22A through K on Panel 09-75 in the Control Room. This test was required to verify the proper installation of plant modification Fl-83-054.

JAF-SE-84-014, Pre-Operational Test 02D

This preoperational test was done to check out the revised wiring performed for Plant Modification Fl-83-034 (modifying the Automatic Depressurization System Actuation Logic) prior to energization, and to perform a functional test of the revised logic.

JAF-SE-84-015, Modification Ml-84-004

This modification installed pulsation dampers (snubbers) in the condensate transfer pump sensing lines to pressure switches 33PS-127A & B. This modification was done to reduce the effects of the pressure transients on the switch diaphragm which has a design pressure of 300 psig.

JAF-SE-84-016, Modification Fl-82-048

This modification involved installing a conductivity cell in the floor drain pump discharge line, downstream of the pump check valve and upstream of three way AOV-195. The cell is connected to a variable-range conductivity monitor installed in the Rad-waste Control Room on Panel 25-17. This conductivity monitoring is necessary in order to determine the optimum processing scheme for the floor drain pump discharge.

JAF-SE-84-017, Heavy Loads Analysis

This safety evaluation analyses the lifting of the Core Spray Pump motor 14P-1A from its pump casing approximately 6 feet southwest and lowered approximately 5 feet to the floor elevation 227'-6". This lift is necessary to perform pump maintenance.

JAF-SE-84-018, Modification Ml-84-006

This modification involved substituting ASTM-A-105 (Stellited) material for ASTM-A-216, Gr. WCB material for Velan valve disc. The materials have similar mechanical properties with the minimum tensile and yield strength requirements being identical.

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JAF-SE-84-019, Modification Fl-80-20

This plant modification involved rewiring of the Post-Accident Hydrogen Monitoring Solenoid Valves in panel 27MAP. The wiring was changed to utilize the solenoid valve control switch and permissive contacts, instead of the magnetic reed position switches, to energize the seal-in relay.

JAF-SE-84-020, Modification Fl-80-019

This plant modification involved the rewiring of the Post-Accident Sampling System Solenoid Valves in Panel 68SIP. The wiring was changed to utilize the solenoid valve control switch and permissive contacts, instead of the magnetic reed position switches, to energize the seal-in relay.

JAF-SE-84-021, Modification Fl-80-027

This plant modification consisted of correcting deficiencies associated with providing adequate space heating for the Emergency Diesel Generator winding. New space heaters with a lower watt density and spatial arrangement were installed.

JAF-SE-84-023, Heavy Load Analysis

This safety evaluation analyzed lifting the Suppression Chamber 48 inch manway cover from its flange and set on the suppression chamber at the curb of the catwalk, adjacent to the manway. This lift is necessary to perform inspection of the ring header. This safety evaluation complies with NUREG-0612.

JAF-SE-84-024, Heavy Load Analysis

This safety evaluation analyzed lifting the Control Rod Drive hatch cover from its flange and set it on 272' elevation, Reactor Building, adjacent to the hatch. This lift is necessary for transport of control rod drive units into and out of the drywell. This safety evaluation complies with NUREG-0612.

JAF-SE-84-025, Heavy Load Analysis

This safety evaluation analyzed the lifting of the East Crescent floor plug from temporary storage, outside the Reactor Building, to the East Crescent equipment hatch and installed. This lift is necessary to restore the fire barrier between the East Crescent and 272' elevation Reactor Building. This safety evaluation complies with NUREG-0612.

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JAF-SE-84-026, Modification M1-84-008

This modification consisted of replacing High Pressure Coolant Injection System 23MOV-14 valve actuator Model SMB-1 with a new actuator Model SB-1. This modification was performed for environmental qualification purposes.

JAF-SE-84-028, Modification F1-84-009

This modification involved enlarging and stiffening the existing baseplate for pipe support PFSK-1911. This pipe support is located on the branch line from the HPCI steam supply to the RHR Heat Exchanger "A".

JAF-SE-84-029, Modification F1-83-059

The Ultrasonic Test (UT) examination of a portion of the stainless steel recirculation system piping, on which Induction Heating Stress Improvement (IHSI) was performed, revealed an indication not attributable to joint/weld geometry in the "A" suction pipe to safe-end weld. The Post-IHSI fracture mechanics analysis indicates a flaw at weld #28-02-2-48 that is sized at 2.875" in circumferential length and 17% of wall thickness and does not reduce the design structural margins of the piping and allows continued operation without repair.

JAF-SE-84-030

During the plant startup on March, 1984, withdrawal of peripheral control rod 02-27 was terminated at notch 44 due to lack of rod position indication at positions 46 and 48. This safety evaluation analyzes the effect of control rod 02-27 potentially dropping from position 44 to 48. General Electric analysis determined this to be a negligible reactivity insertion. The effect of rod 02-27 at position 44 on a rod drop accident involving a different control rod would also be negligible.

JAF-SE-84-031, Rev. 1, Modification M1-84-010

This modification involved substituting Wiscalloy 416 material for original valve seat ring material ASTM A 182 Gr. F6 on Residual Heat Removal and Core Spray System valves 10MOV-89A, B and 14 MOV-7A, B respectively. Wiscalloy 416 has similar mechanical and chemical properties to ASTM A182 Gr. FC. The yield strength for each material are the same.

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JAF-SE-84-032, Reactor Pressure Vessel Heatup Transient

During the plant startup on March 14, 1984, a heatup transient occurred between temperature 204°F and 315°F with a maximum hourly heatup rate of 102°F/hr. which exceeded Technical Specifications requirements of 100°F/hr. The effect has been evaluated by General Electric and has been determined to be insignificant with no adverse consequences on present or future plant operations.

JAF-SE-84-033, Depolarization of LPCI Batteries

The safety evaluation covers the subject maintenance activity for depolarization of the LPCI independent power supply batteries. The process involved adding 5.6 CC's of the depolarizing solution to each cell in both batteries. This maintenance activity was done to reduce the wide range of cell float voltages within a battery to a narrower, acceptable range.

JAF-SE-84-034, Modification M1-84-007

This modification involved installing test medium injection port and sampling ports downstream of Radwaste equipment vent filters F12A & B and F13A & B. This modification was done in order to perform periodic testing of the radwaste tank and equipment vent filters.

JAF-SE-84-035, Modification M1-84-012

This modification involved disabling of card readers to the east/west crescent doors R-272-13 and R-272-14. This modification also includes removal of the card readers, palm switches, magnetic door switches, conduit and cables to the nearest junction box. Security access control to a vital area (Crescent) within a vital area (Reactor Building) is not required from a security standpoint. Removing the card readers and providing access for Doors 203 and 216 by use of a controlled key is in accordance with Technical Specifications.

JAF-SE-84-036, Modification M1-84-013

This modification involved substituting ASTM-A-106 Gr. B material or ASME-SA-105 material for valve seat ring ASTM-A-216 Gr. WCB. The mechanical and chemical properties are similar. The minimum tensile and yield strength for each material are identical.

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JAF-SE-84-037, Modification M1-84-014

This modification involved replacement of the valve position switches for RCIC turbine trip throttle valve 13HOV-1 and HPCI turbine stop valve (23HOV-1). This modification was performed for environmental qualification purposes because documentation was not available on the original position switches.

JAF-SE-84-038, Modification F1-82-018

This safety evaluation reviewed the present operation of the JAFNPP Reactor Protection System (RPS) on an interim basis with non-conforming wiring terminations in trip channel A2. The non-conforming wiring terminations occurred during installation of plant modification F1-82-018 which modified the JAF Scram Discharge System and Reactor Protection System. The instrument surveillance tests confirmed that the Scram Discharge Instrument Volume level sensors are tripping different scram relays within trip channel A2 than presently specified on the approved design drawings. This safety evaluation was required to allow plant operations on an interim basis until the actual installation can be brought into conformance with the approved system design drawings.

JAF-SE-84-039, Modification M1-84-016

This modification allowed the use of Hilti (Kwik Bolt) wedge anchors to be used in lieu of Phillips (Red Head) wedge anchors on condensate system pipe supports H33-348 and H33-349. The Hilti wedge anchors have higher pullout strength but lower shear values than Phillips wedge anchors for the same bolt size and embedment.

JAF-SE-84-040, Modification M1-84-018

This modification consisted of opening each junction box, inspecting the terminal boards in each box and drilling of a 1/4" diameter "Weep Hole" in the lowest part of the box. The purpose of the modification is to bring the junction boxes into conformance with the configuration which was successfully subjected to environmental qualification tests.

JAF-SE-84-041, Modification M1-84-019

This modification consisted of drilling a 1/4" diameter "Weep Hole" in the lowest part of all safety-related junction boxes located in the Drywell and Steam Tunnel. The terminal board junctions were also replaced with crimped splices insulated with Raychem material. This modification was performed for environmental qualification purposes.

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JAF-SE-84-042, Modification Fl-79-030, Partial Installation

Sludge transfer, within the radwaste system, is presently carried out through temporary means. Many of the existing sludge lines are not used and are crud traps causing many localized hot spots within the piping system. The partial modification involved removing the piping on the radwaste system for ALARA concerns. The installation of the modification does not affect the function of the liquid radioactive waste system.

JAF-SE-84-044, Modification Fl-79-030 & Fl-83-022, Partial Installation

This partial modification entailed the installation of raceways and placement of floor and wall sleeves. The purpose of this partial modification is to install raceways and floor and wall sleeves necessary for the implementation of other modifications within the radwaste system.

JAF-SE-84-045, Modification Fl-84-011

This plant modification involved the design and construction of a 1800 square foot climate controlled building for the purpose of storing quality assurance records. The structure is located approximately 100 feet south of the Reactor Building. The Authority's Operating Quality Assurance Program requires that quality records of safety-related items and activities shall be identified, reviewed, retained, and retrievable.

JAF-SE-84-046, Modification Ml-84-029

This modification consisted of replacing existing 12" Anderson Greenwood Wafer Check Valve, type CV1A, with an Anderson Greenwood redesigned and improved 12" Wafer Check Valve, type CV1B. This modification replaced 76-FPS-44 and 53 check valves on the Fire Protection System.

JAF-SE-84-049, Floor Loading Evaluation

This evaluation involved the addition of a 12,000 pound load on the Administration Building 272'-0" elevation floor due to the installation of a post-accident sampling system shielding cave comprised of lead blocks.

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JAF-SE-84-051, Modification Fl-82-076

This modification involved adding a larger drain volume, installed off the low point of the discharge line on the vent line above the Air Separator Tank. This vent line above the H₂ Seal Oil Separator Tank functions in conjunction with the Main Turbine Generator systems vacuum pump 94SOVP-14 to provide a discharge path to atmosphere. The previous design did not preclude the possibility of condensate or rain water from backflowing into the Seal Oil Separator Tank from the vent line exhausting to the roof.

JAF-SE-84-052, Modification Ml-84-030

This modification consisted of substituting material for miscellaneous valves. ASTM-A-479 SS304 material is being substituted for ASTM-A-276 SS304 material for the lantern ring. ASTM-A-105 material is being substituted for valve disc material ASTM-A-216 Gr. WCB.

JAF-SE-84-053, Modification Ml-84-031

This modification involved substituting ASTM B-148 alloy C951400, for the circulating water pump impellers. The original impeller material was ASTM B-584, alloy C90300. This material change provides an impeller material of higher tensile strength, greater corrosion and erosion resistance.

JAF-SE-84-054, Modification Ml-84-032

This modification consisted of installing a permanent power supply for the screenwell dewatering pumps. This consists of a 75KVA transformer (600V-208/120V) fed from MCC-333, also a 225 AMP panelboard and five three-pole, four-wire receptacles.

JAF-SE-84-055, Modification Ml-84-033

This modification involved substituting ASTM-A-217 Gr. CA15 material for existing valve disc holder material ASTM-A-351 Gr. CA15. ASTM-A-217 Gr. CA15 is identical in mechanical and chemical properties to ASTM-A-351 Gr. CA15. This valve material change is for Powell 8" and 20" 150#, and 16" 300# swing check valve parts.

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JAF-SE-84-057, Modification Ml-84-046

This modification involved substituting valve parts for miscellaneous valves throughout the plant. Valve manufacturers no longer furnishes the valve stems, discs and seats in required material. The materials being substituted are equal to or better than the material they replaced.

JAF-SE-84-058, Modification Fl-84-047

This modification consisted of replacing all the existing stainless steel tubing in the Main Condenser with titanium tubing. Stainless steel tubes were used in the outer three (3) rows to prevent steam impingement and also used in the inner three (3) rows due to the high concentration of non-condensable gases.

JAF-SE-84-059, Modification Ml-84-049

This modification involved the direct replacement of the motor, and the torque and limit switches on Reactor Core Isolation cooling motor operated valve 13MOV-15. The valve operator involved is QA Class I and must conform to IEEE Standards 323-1974 and 344-1975. This modification was performed for environmental qualification purposes.

JAF-SE-84-061, Modification Ml-84-050

This modification consisted of replacing and relocating a threaded rod on Service Water Pipe Support H46-68 on line 14"-WS-151-29.

JAF-SE-84-064, Modification Fl-84-017

This plant modification involved replacement of the carbon steel (ASTM A106) HPCI steam supply drain line with a more erosion resistant alloy (Chrome Moly A335-P5). The original steam trap (Strong 1540 series) was replaced with an improved model (Armstrong No. 51336).

JAF-SE-84-066, Modification Ml-84-054

This modification involved substituting valve parts for miscellaneous valves for the Core Spray, High Pressure Coolant Injection, and Feedwater Systems. The original valve manufacturer no longer furnishes various parts for the existing valves. The materials being substituted are equal to or better than the materials they are replacing.

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JAF-SE-84-068, Modification M1-84-057

This modification consisted of adding a 120V duplex receptacle in the diesel fire pump room. The receptacle was wired to an existing receptacle outside the east wall of the pump room.

JAF-SE-84-070, Modification F1-84-040

This plant modification entailed the substitution and relocation of pipe support spring hangers for Feedwater System pipe support H34-56. The single spring can assembly under the pipe was removed and replaced with a pair of spring can assemblies located in-line with existing hanger rods. A walkdown on feedwater line 18"-WFP-902A revealed that pipe support H34-56 was found to be out of line and possibly binding.

JAF-SE-84-071, Heavy Load Analysis

This safety evaluation is to cover lifting of an Emergency Service Water (ESW) or RHR Service Water pump or its base motor, 255'-0" elevation to the 272'-0" elevation. In addition, the corresponding 272'0" elevation floor plug was removed. This lift is necessary to perform maintenance of the ESW and RHR service water pumps. This safety evaluation complies with NUREG-0612.

JAF-SE-84-072, Modification F1-83-002

This plant modification provided a source of 208/120 volt power for the purpose of lighting, heating and air conditioning inside the temporary administrative complex.

JAF-SE-84-073, Modification F1-83-002

This plant modification provided sanitary, portable water, and sprinkler system connections for the temporary administrative complex.

JAF-SE-84-076, Modification M1-84-061

This modification consisted of installing elapsed time meters to the motor controllers for the sewage pumps.

JAF-SE-84-078, Modification M1-84-064

This modification involved substituting valve parts for High Pressure Coolant Injection System 23MOV-14 valve. The valve manufacturer no longer furnishes various parts in the original materials for the existing valve. The materials being substituted are equal to or better than the materials they replaced.

ENCLOSURE (1)
SUMMARY OF MODIFICATIONS, CHANGES AND EXPERIMENTS
IMPLEMENTED AT JAFNPP DURING 1984

JAF-SE-84-080, Modification Fl-84-048

This modification involved relocating the power supply feeders from Reactor Building panels 71ACA5 and 71ACB5 to Relay Room Panels 71ACA2 and 71ACB2. This modification was done in lieu of qualifying the local 120VAC Distribution Panels and associated, distribution transformers in accordance with IE Bulletin 79-01B.

JAF-SE-84-081, Modification Ml-84-075

This modification consisted of changing the temperature setpoint of Reactor Water Cleanup System (RWCU) temperature switches from 178°F to 135°F. This change was required because measured ambient and calculated temperatures in the RWCU sensor vicinity are less than the temperature used as a basis for the original setting. Reactor Building temperatures, as a result of a postulated High Energy Line Break, are reduced by this modification.

JAF-SE-84-083, Heavy Load Analysis

This safety evaluation analyzed the required lifting of IHSI components from the rail car to the floor (272' level) in the southeast equipment hatch of the Reactor Building prior to the IHSI implementation. This safety evaluation complies with NUREG-0612.

JAF-SE-84-085, Equipment Machining and Sealing

This modification consisted of installing a temporary bonnet seal for 10MOV-18, 20" Powell 900# gate valve by injecting a Furmanite Compound F83MEN or F-700 into the pressure seal area.

JAF-SE-84-086, Heavy Load Analysis

This safety evaluation covered the lifting of a 25 ton test weight, used for post maintenance testing of the 20 ton hoist, reactor building crane. This lift was limited to a height of 5 feet above the 272' elevation. This lift was performed in the southwest equipment hatch area of the reactor building. This safety evaluation complies with NUREG-0612.

JAF-SE-84-087, Modification Fl-84-069

This plant modification consisted of installing a temporary Drywell Cooling System to support the work for the IHSI program. Two 4" permanent tees were installed on A and B Reactor Building Closed Loop Cooling Water return lines from the drywell cooling assemblies, 68-E-1A-D and 68-E-3A-D. The tees are isolated with blind flanges during normal operation.

ENCLOSURE (1)
SUMMARY OF MODIFICATIONS, CHANGES AND EXPERIMENTS
IMPLEMENTED AT JAFNPP DURING 1984

JAF-SE-84-088, Temporary Modification

This safety evaluation covered the removal of "A" recirculation pump seal #2 leak flow indicator switch 02-FIS-21A on line 3/4"-WH-152-25A. The damaged flow indicator switch was removed and replaced with a short section of 3/4" carbon steel pipe.

JAF-SE-84-089, Rev. 1, Temporary Shielding

This safety evaluation covered the installation of four-8' and four-4' water shields to temporarily replace the concrete block and steel shield in the Reactor Building at the SE Drywell entrance. This temporary replacement was done to eliminate the need for installing the permanent concrete block shielding in the Reactor Building at the SE Drywell Entrance for the short duration of plant operation.

JAF-SE-84-092, Modification Fl-84-068B

This modification involved moving piping and structures to provide sufficient clearance for performance of IHSI on Reactor Recirculation System piping welds. In order to provide the required clearance in accordance with established clearance criteria, it was necessary to cut and temporarily remove certain pipe supports.

JAF-SE-84-093, Modification Ml-84-093

This modification involved substituting valve parts for miscellaneous valves for various systems. The valve manufacturer no longer furnishes the original parts for the existing valves. The materials being substituted are equal or better than the materials they are replacing.

JAF-SE-84-094, Modification Fl-84-068D

This modification consisted of the removal and capping of four Containment Spray Nozzle assemblies in the Residual Heat Removal System. This modification was required to facilitate access for proper installation of IHSI heating coils on the Reactor Recirculation System. Without this modification, the IHSI heating coils could not be properly emplaced due to interference with the adjacent containment spray nozzle assemblies.

ENCLOSURE (1)
SUMMARY OF MODIFICATIONS, CHANGES AND EXPERIMENTS
IMPLEMENTED AT JAFNPP DURING 1984

JAF-SE-84-095, Modification Fl-84-067

This plant modification consisted of performing Induction Heating Stress Improvement (IHSI) process for 58 weld joints on the Recirculation System and two in the Residual Heat Removal System piping. The IHSI process was done to arrest or eliminate the probability of Intergranular Stress Corrosion Cracking.

JAF-SE-84-096, Modification Ml-84-077

This modification consisted of relocating 87PCV-105 from the front casing of "B" auxiliary boiler to building column 6E. Relocation of this valve will facilitate boiler maintenance.

JAF-SE-84-097, Modification Ml-84-078

This modification involved removing three Crouse Hinds Vaporguard incandescent lighting fixtures C/N VXHBF25GP and replacing them with three Crouse Hinds 150 watt champ H.I.D. high pressure sodium lighting fixture with auxiliary quartz lamp C/N VMVS2TN150GP-120LX QTZ wall mounted fixtures. This modification was designed to improve the lighting levels under the reactor vessel while utilizing the existing power supplies.

JAF-SE-84-098, Modification Fl-84-068A

This plant modification involved temporarily removing the Reactor Recirculation System Suction Line Pipe Whip Restraints R3A and R3B. The removal of pipe restraints R3A and R3B was required to provide sufficient clearance at Reactor Recirculation System Weld Joints 28-52 and 28-111, respectively, for performance of Induction Heating Stress Improvement.

JAF-SE-84-101, Modification Fl-84-068A

This modification addressed the permanent removal of two pipe whip restraints R3A and R3B located on the lower ends of the recirculation suction piping on loop A and B respectively. Permanent restraint removal reduced the occupational exposure considerably. Their removal also eliminates the associated risk of handling the heavy restraint supports over these portions of recirculation piping everytime removal and reinstallation are required for the inservice inspection.

ENCLOSURE (1)
SUMMARY OF MODIFICATIONS, CHANGES AND EXPERIMENTS
IMPLEMENTED AT JAFNPP DURING 1984

JAF-SE-84-105, Modification Fl-84-068C

This modification consisted of moving conduits and raceways located in the interference envelope in order to provide clearance for the performance of IHSI on Reactor Recirculation System piping welds. The temporarily removed structures were reinstalled after completion of IHSI as per the original design requirements and the conduits/junction boxes were returned to the original position.

JAF-SE-84-110, Heavy Load Analysis

This safety evaluation analyzed the lifting of the covers for Reactor Building Equipment Drain tanks TK-69 A&B. The lift was approximately 12" off the floor and moved horizontally between 3' to 6' and installed the covers on top of the tanks.

JAF-SE-84-114, Modification Ml-84-083

This modification replaced eroded/corroded sections of small bore Class 151 and Class 301 carbon steel pipes in the Turbine Drain System with a more erosion and corrosion resistant stainless steel piping.

JAF-SE-84-117, Test Report 81TR-880

This safety evaluation analyzed the functional/operational impact during the use of fractured relay cases in safety related systems. The General Electric HFA relays were tested to determine the effects of fractures upon relay function over an accelerated life span. General Electric Company Fracture Analysis provides data showing that relay fracture cases do not increase the probability of occurrence or consequences of an accident evaluated in the FSAR pending relay replacement.

JAF-SE-84-118, Modification Ml-84-086

This modification consisted of replacing the existing flexitallic gasket for the reactor recirculation pump throttle bushing injection inlet and outlet with a seal-welded diaphragm. The new diaphragm material is ASTM-A-240, Gr. 340 and eliminates the possibility of leaks from this pump connection.

JAF-SE-84-119, Modification Fl-84-067

The post-IHSI inspection results indicated that there are flaws in welds 28-02-2-112 and 28-02-2-113. Fracture mechanics analysis of these flaws indicated that in the as-welded condition these cracks would not grow to significant size in less than 36 months.

ENCLOSURE (1)
SUMMARY OF MODIFICATIONS, CHANGES AND EXPERIMENTS
IMPLEMENTED AT JAFNPP DURING 1984

JAF-SE-84-120, Modification Fl-84-067

The post-IHSI ultrasonic test of the flaw for weld 12-02-2-4 resulted in an estimated circumferential length of 4.0" and a depth of 0.046" which represents 7.5% of wall thickness. The subsequent fracture mechanics analysis of this flaw reveals that its presence does not reduce the structural design margin of this piping and allows for continued operation without repair.

JAF-SE-84-123, Modification M1-84-088

This modification involved replacing Powell Valve Model 1523WE 10MOV-89A valve with Anchor Darling Valve M/N 93-14944 Figure E6318-5. The replacement valve class and operating characteristics are equal to the original valve. The Quality requirements are equal or greater than original specifications and the valve is manufactured to ASME III, Class 3, seismic category I.

JAF-SE-84-125, Modification Fl-84-067

The post-IHSI ultrasonic test of the flaw for weld # 12-02-2-17 resulted in an estimated combined circumferential length of 2.90" and a depth of 0.061" which represents 10% of wall thickness. The subsequent fracture mechanics analysis of this flaw reveals that its presence does not reduce the structural design margin of this piping and allows for continued operation without repair.

JAF-SE-84-129, Modification Fl-84-067

The post-IHSI ultrasonic test of the flaw for weld #28-02-2-53 resulted in an estimated combined circumferential length of 0.28" and a depth of .069" which represents 0.05% of pipe wall thickness. Fracture mechanics analysis of this flaw indicates that in the as-welded condition, this crack would not grow to a significant size in less than 36 months.

JAF-SE-84-130, Modification M1-84-088

This modification involved the replacement of the motor for 10MOV-89A valve. The replacement motor is similar in operating characteristics to the original motor. Quality requirements are equal to the original specifications.

JAF-SE-84-132, Modification Fl-84-091

This modification involved piping and pipe support stress analysis of existing discrepancies discovered as a result of the Pipe Support Inspection Program, and subsequent design drawing revisions.

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Harold A. Glovier
Resident Manager



July 16, 1985
JAFP 85-0587

United States Regulatory Commission - Region I
Office of Inspection and Enforcement
631 Park Avenue
King of Prussia, PA

Attention: Dr. Thomas Murley
Regional Administrator

SUBJECT: ³DOCKET 50-33 - ANNUAL SUMMARY OF JAMES A.
FITZPATRICK NUCLEAR POWER PLANT MODIFICATIONS,
CHANGES AND EXPERIMENTS FOR 1984

Enclosure: (a) Summary of Modifications, Changes and Tests
Implemented at James A. FitzPatrick Nuclear
Power Plant During 1984

Gentlemen:

Enclosed for your review is a summary of modifications, changes and tests implemented at the James A. FitzPatrick Nuclear Power Plant during 1984 in accordance with 10CFR50.59 requirements.

If you have any questions concerning this report, please contact Mr. Victor M. Walz at (315) 342-3840, extension 265.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'HAG' or similar, written over the typed name.

HAROLD A. GLOVIER
HAG:CJB:lad

CJB
ENCLOSURE

CC: Director of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555
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