

I. OPERATIONS SUMMARY

A. Changes in Facility Design

1. The following changes required authorization from the Commission

a. EDCR 80-28, Gaseous Radiation Monitor

EDCR 80-28 was completed August 6, 1983.

This change addressed the requirements of NUREG-0578, Section 2.1.8.b, Increased Stack Gas Monitor Overlap, by installing an ion chamber capable of detecting Xe^{133} and Kr^{85} with a range of 10^{-3} to 10^5 $\mu Ci/cc$.

b. EDCR 81-24, RPS MG Set Modification

EDCR 81-24 was completed May 27, 1983

The NRC had determined that there are certain potential deficiencies in the design of the protective circuits of the motor-generator (MG) sets which supply power to the Reactor Protective System (RPS). In order to alleviate the NRC concern, Vermont Yankee has completed the installation of GE Power Protection Panels (called "Electrical Protection Assemblies" by GE) which are designed to de-energize the RPS buses when their power source output exceeds or falls below limits for which the RPS equipment has been designed.

c. EDCR 82-01, VY CRD Scram Discharge/Instrument Volume Modification

EDCR 82-01 was completed April 26, 1983

This EDCR addresses the mechanical changes necessitated by I.E. Bulletin 80-17 to improve the reliability of the Scram Discharge System.

d. EDCR 82-06, CRD System Modifications - Elec/Scram Discharge Volume Instrumentation

EDCR 82-06 was completed May 4, 1983

This EDCR describes the instrumentation portion of the scram system modification. The changes are part of the overall changes to the scram system to improve its reliability. Designs are in accordance with criteria developed by the BWR Owner's Group.

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- e. EDCR 82-24, 1982 Modification of the Vermont Yankee Nuclear Power Station Torus

EDCR 82-24 was completed May 26, 1983

This EDCR, which is part of a phased program for improvements to Mark I Containments, added gusset plates at vent header downcomer intersections, removed the internal catwalk and added four additional vacuum breakers.

- f. EDCR 82-35, Torus Attached Piping Support Modification/Design

EDCR 82-35 was completed May 21, 1983

The changes incorporated in this EDCR consisted of upgrading of piping systems by installation of new and modified pipe supports.

- g. EDCR 83-23, Additional Torus Attached Piping Support Modification Design

EDCR 83-23 was completed September 16, 1983

This modification involved modification of existing supports and additions of new supports to the torus-attached piping systems to satisfy the requirements of the MARK I containment program.

- h. PDCR 82-08 Analog Trip Modifications Phase II

PDCR 82-08 was completed June 21, 1983

Phase II of the Analog Trip Modification was a continuation of the change initiated by EDCR 79-02. This PDCR replaced the pressure switches used to sense drywell pressure with analog instrumentation and added the low reactor pressure ECCS permissive function to analog instrumentation installed by Phase I.

2. The following changes did not require prior Commission approval but were reviewed by PORC. It was agreed that each did not involve any unreviewed safety questions as defined in 10 CFR 50.59(a)(2) based on the information presented.

- a. EDCR 80-17, UPS Control Power

EDCR 80-17 was completed July 22, 1983

This EDCR eliminated the manual transfer between control power supplies by paralleling the two positive and the two negative control power supplies using diode isolation. Effectively, the power supplies now share the control power requirements during normal operation. If one of the positive or negative power supplies fails, the diodes isolate it from

the circuit and the UPS continues to function using the other power supply. The power supply failure is alarmed as a minor alarm in the Control Room and on the UPS control panel with local indicating lights to indicate which power supply failed. The existing manual-transfer switch assembly was removed and replaced by the new paralleling assembly from Exide Electronics.

b. EDCR 82-33, Toxic Gas Monitoring System

EDCR 82-33 was completed September 30, 1983

NUREG-0737 requires that licenses shall assure that the Control Room will remain habitable for the operators during and following an accidental release of toxic or radioactive gases, and that the plant can be safely shut down.

This design installed a Toxic Gas Monitoring System to monitor for the following gases: vinyl chloride, ammonia, chlorine, methanol and carbon dioxide. Upon detection, the Toxic Gas Monitoring System initiates the Bottled Pressurization System, alerts the operators of the presence of a toxic substance and places the Control Room HVAC into the recirculation mode.

c. EDCR 82-34, Switchgear Room HVAC Modifications

EDCR 82-34 was completed August 8, 1983

This change was done to accommodate the division of the switchgear room into two separate compartments to meet the requirements of 10 CFR 50 Appendix R.

d. EDCR 82-36, Recirculation MG Set Ground Detection Low-Pass Filters

EDCR 82-36 was completed April 11, 1983

This EDCR installed a low-pass filter between the relay coil and the neutral voltage transformer in order to prevent the Reactor Recirculation MG from tripping during the starting sequence.

e. EDCR 82-37, Torus Instrumentation

EDCR 82-37 was completed April 28, 1983

This EDCR remounted the Torus Instrumentation due to the removal of the Torus catwalk. Suppression pool bulk water temperature thermocouples were replaced with qualified thermocouples.

f. EDCR 82-38, Control Room Emergency Breathing Air System

EDCR 82-38 was completed September 16, 1983

The above design change installed an Emergency Breathing Air System to work in conjunction with the Toxic Gas Monitoring System as required by requirement III.D.3.4 of NUREG - 0737, "Control Room Habitability".

g. EDCR 83-11, Modifications to ISI Supports

EDCR 83-11 was completed May 12, 1983

This EDCR redesigned damaged supports found during the 1983 ISI Program.

h. EDCR 83-13, Repair of Recirculation System Piping

EDCR 83-13 was completed June 5, 1983

This EDCR consisted of placing a welded overlay on the outer diameter (OD) of selected recirculation pipe welds while the inside (ID) was filled with water. These repairs are part of the response to I.E. Bulletin 82-03.

i. EDCR 83-21, RRU 5-8, RRU 17A and B, SW Line Replacement

EDCR 83-21 was completed September 15, 1983

This design change involved the installation and modification of service water pipe supports to increase the load carrying capability of the system.

j. PDCR 80-17, SR 44 Relocation

PDCR 80-17 was completed April 10, 1983

This PDCR addressed the relocation of valve SR 44 on the RHR-25 line in order to facilitate its maintenance.

k. PDCR 81-09, RRU and UPS Coolers Service Water Piping Replacement

PDCR 81-09 was completed July 19, 1983

This PDCR provided for the replacement of welded carbon steel pipe in RRU's 5-8, 9, 17A and B and UPS with silver-soldered copper tubing. This change also replaced the four isolation valves and associated header piping for the RHR service water pump motor cooling with stainless steel valves and pipe. This change was part of the overall program to correct observed corrosion in small steel lines.

1. PDCR 82-01, H₂O₂ Monitor

PDCR 82-01 was completed June 21, 1983

The PDCR installed two Teledyne Model 225-CMA hydrogen/oxygen analyzers in the Reactor Building 280 ft. level near the existing Delphi Unit. The analyzers control units were installed in the Control Room on the CAD panels.

m. PDCR 82-02, Containment Sample Valve Modification

PDCR 82-02 was completed June 14, 1983

This PDCR replaced Atkomatic solenoid valves VG16-19-20, 22A and 22B with qualified Target Rock model 1025010-5-4-1"-S solenoid valves. Operation and performance of the Containment Sampling Valve System was not changed. Valves FSO-109-76A and B, due to deficiency during 10 CFR 50, Appendix J leak rate testing, were also replaced with the Target Rock model.

n. PDCR 82-03, Vital AC Improvements and Feedwater Control Power Supply

PDCR 82-03 was completed May 2, 1983

This PDCR took the feedwater pump high water level trip circuits off vital uninterruptable AC and placed them on 125 VDC distribution to overcome the possibility of losing the feedwater control system.

This design change also addressed the time it takes the Control Room Operator to shift from uninterruptable vital AC MG set to MCC-9A by moving the manual transfer switch from CRP 9-45 to CRP 9-5, thereby putting it in reach of the Control Room Operator at all times.

o. PDCR 82-10, Type "C" Test Improvements

PDCR 82-10 was completed June 14, 1983

This PDCR improved the reliability of the hard seat lift type check valves, PCAC 51 and 52 by installing an O-ring and replacing the lift.

p. PDCR 82-14, Switchgear CO₂ Separation

PDCR 82-14 was completed June 30, 1983

This PDCR, a result of alternate S/D commitments, divided the switchgear room by a fire wall in order to separate the two divisions of power supplies. The design change also modified

the existing fire detection and suppression systems to independently protect the new areas. The separation will guarantee the availability of power to safety systems required to shut the plant down in the event of a fire in the switchgear room.

q. PDCR 83-01, Recirc. Pump Seal Purge System

PDCR 83-01 was completed May 14, 1983

This PDCR installed a purge system for the recirculation pump's seals. Clean water from the CRD system supplies the seal purge system to keep the recirculation pump's seals clean, increasing their reliability.

r. PDCR 83-02, RCU-68 Replacement

PDCR 83-02 was completed April 15, 1983

This PDCR replaced RCU-68. The new valve is less susceptible to IGSCC but was not a one-to-one replacement. The scope of this PDCR included the addition of support hangers required by the seismic analysis.

s. PDCR 83-03, DI Water Modifications

PDCR 83-03 was completed June 21, 1983

This PDCR removed cross-connections between the demineralized water system (DW) and contaminated systems in racks 25-5, 6, 51 and 52. Cross-connections existed between DW and sensing lines from primary containment. Removal of these connections was justified by the recommendation of I.E. Circular No. 80-14.

t. PDCR 83-04, Diesel Generator Stopping Relay Replacement

PDCR 83-04 was completed June 15, 1983

This PDCR replaced the diesel stopping relay with an improved relay of a different manufacturer. The new relays, AGASTAT model E7024PE, have a time delay of 20 to 200 seconds and were mounted in the same panel as the old relay. However, due to the differences in physical size, the relay was mounted in a different location within the panel.

u. PDCR 83-05, SDV Vent and Drain Valve Test Switch

PDCR 83-05 was completed June 1, 1983

This PDCR improved the closing time of the SDV vent and drain valves in the testing mode by eliminating the SDV vent and

drain valves test solenoid No. 3-29, and rewiring the SDV vent and drain valve pilot solenoids (3-31A and B) so that they can be de-energized by means of the test switch located in CRP 9-5. This test switch is the same one previously used to energize the test solenoid.

v. PAR 81-02, Hotwell Level and Feedwater Level Controls

PAR 81-02 was completed April 29, 1983

This change upgraded the present hotwell level indication and feedwater heater level control system. As a result of this change the reliability of the system was enhanced and spare parts are more easily obtained.

w. PAR 81-19, RRU, TRU, and AOG Service Water Piping Replacement

PAR 81-19 was completed July 13, 1983

This PAR specified replacement of the 3" and smaller welded carbon steel pipe to RRU's 10-12 and 14-16, TRU's 1-5, and AOG with silver-soldered copper tubing and stainless steel pipe. This change also corrected observed pluggage of the lines with corrosion products, and is part of the overall program to eliminate service water corrosion in small steel lines.

x. PAR 82-04, Radwaste Modifications

PAR 82-04 was completed July 5, 1983

This PAR constructed a Butler building for sheltering the radwaste compactor. The building is located on the east wall of radwaste and replaced the existing temporary shelter.

y. PAR 82-11, Condemin Isolation Valves

PAR 82-11 was completed April 6, 1983

This change added isolation valves on the "A" and "E" condensins in lines CD-1A, E and CD-3A, E. The valves provided increased ability to perform on-line maintenance of the system.

z. PAR 82-20, Computer Room HVAC

PAR 82-20 was completed April 4, 1983

This PAR installed a HVAC system in the computer room for the new VAX 11/780 computer.

aa. PAR 83-03, Y-Strainer Installation N₂ Makeup Line

PAR 83-03 was completed February 4, 1983

This alteration installed a Y-Strainer with a magnetic element in the containment nitrogen makeup line upstream from valves SB-16-20-20 and 22B in order to clean out iron particles and other foreign matter which has caused the valves to fail.

bb. PAR 83-08, Installation of Flange Set on Rx Vessel Drain Line

PAR 83-08 was completed May 30, 1983

This PAR added a flange set to the reactor vessel drain line in order to break the line and attach a temporary mechanical bypass that facilitates the draining of the vessel.

cc. PAR 83-09, Techmark Leak Detection System Installation

PAR 83-09 was completed July 20, 1983

This alteration installed a Techmark Leak Detection System to continuously monitor welds on the recirc. system piping for leakage. This is part of the response to I.E. Bulletin 83-02.

dd. PAR 83-10, Lubrication System to Recirculation Gate Operator

PAR 83-10 was completed June 20, 1983

This PAR coated the internal threads on the circulating water recirculation gate valve stem nut with a special high-lubricity coating. In addition, an automatic oiling system was added to the limitorque operator to apply oil directly to the stem at points above and below the stem nut.

ee. PAR 83-11, Installation of the VY Administrative Computer Hardware

PAR 83-11 was completed July 8, 1983

This change installed a Digital Equipment Corporation (DEC) VAX 11/780 in the computer room.

ff. PAR 83-15, Intake Gate Oilers

PAR 83-15 was completed October 7, 1983

This PAR coated the internal threads of modified stem nuts on the Intake Gate Operators with a special high-lubricity coating. In addition, an automatic oiling system was added to the limitorque operators to apply oil directly to the stem at points above and below the stem nuts.

B. Tests or Experiments

1. The following tests or experiments did not require prior Commission approval but were reviewed by PORC. It was agreed that each did not involve any unreviewed safety questions as defined in 10 CFR 50.59(a)(b) based on the information presented.

- a. STP 83-01, Feedwater Cobalt Injection with No Cleanup

STP 83-01 was completed January 28, 1983

The purpose of this test was to (1) determine the effects of reactor water cobalt concentration due to feedwater concentration step increases and establish reactor water cobalt equilibrium data; (2) determine the source area of primary system cobalt concentration and (3) verify cobalt concentration anomalies present in feedwater trains.

- b. STP 83-02, Seismic Evaluation of Control Cabinets/Racks

STP 83-02 was completed April 8, 1983

This test measured the seismic response frequencies and mode shapes corresponding to frequencies less than 33 Hz for specific control cabinets/racks and provided data to ensure that future models can accurately reflect equipment configurations.

- c. STP 83-03, Anchor-Bolt Torque Test and Torque Wrench Calibration Verification

STP 83-03 was completed June 15, 1983

This special test procedure verified proper installation of anchor bolts torqued with Mercury Co. torque wrenches TE-561, TE-565 and TE-567, as required by Nonconformance Report 82-09.

- d. STP 83-04, Single Recirc Loop Operation Data Collection

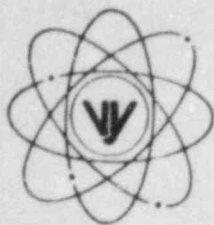
STP 83-04 was completed December 17, 1983

The purpose of this test was to gather single recirc pump operating data so that a drive flow vs. core flow curve could be generated.

C. Safety and Relief Valve Failures and Challenges

During 1983, there were no challenges to or failure of the safety and relief valves.

VERMONT YANKEE NUCLEAR POWER CORPORATION



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March 5, 1984

FVY 84-16
17.R.4.1

United States Nuclear Regulatory Commission
Region I
631 Park Avenue
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Attention: Office of Inspection and Enforcement
Dr. Thomas E. Murley, Regional Administrator

Reference: (a) License No. DPR-28 (Docket No. 50-271)

Subject: Vermont Yankee 1983 Annual Operating Report

Dear Sir:

Enclosed herewith please find two (2) copies of the Vermont Yankee Nuclear Power Corporation Annual Operating Report, submitted in accordance with 10CFR50.59(b). This report describes the facility changes, tests, and experiments conducted without prior NRC approval during the year 1983.

We trust this information is acceptable; however, should you have any questions regarding this matter, please contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

J. B. Sinclair
Licensing Engineer

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cc: United States Nuclear Regulatory Commission
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