MAINE YANKEE NUCLEAR POWER STATION

MONTHLY STATISTICAL REPORT 81-3

FOR THE MONTH OF MARCH, 1981

OPERATING DATA REPORT

DOCKET NO. 50-309
DATE 810410
COMPLETED BY D. M. Bernard
TELEPHONE 617-872-8100 X2390

OPERATING STATUS

1. Unit Name: Maine Yankee
2. Reporting Period: March, 1981
3. Licensed Thermal Power (MWt): 2630
4. Nameplate Rating (Gross MWe): 864
5. Design Electrical Rating (Net MWe): 825
6. Maximum Dependable Capacity (Gross MWe): 850
7. Maximum Dependable Capacity (Net MWe): 810
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:

Notes

Power level restricted by steam flow through the low pressure turbine.

9. Power Level To Which Restricted, If Any (Net MWe): 864 MWe (~97%)
10. Reasons For Restrictions, If Any: See Notes

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	744.00	2,160.00	
12. Number Of Hours Reactor Was Critical	744.00	2,160.00	59,915.97
13. Reactor Reserve Shutdown Hours	0.00	0.00	0.00
14. Hours Generator On-Line	744.00	2,160.00	58,018.25
15. Unit Reserve Shutdown Hours	0.00	0.00	0.00
16. Gross Thermal Energy Generated (MWH)	1,899,545.00	5,503,970.00	124,882,199.00
17. Gross Electrical Energy Generated (MWH)	632,730.00	1,830,800.00	41,032,960.00
18. Net Electrical Energy Generated (MWH)	604,469.00	1,748,695.00	38,980,020.00
19. Unit Service Factor	100.00	100.00	78.87
20. Unit Availability Factor	100.00	100.00	78.87
21. Unit Capacity Factor (Using MDC Net)	100.30	99.95	68.32
22. Unit Capacity Factor (Using DER Net)	98.48	98.13	66.15
23. Unit Forced Outage Rate	0.00	0.00	7.22

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):

25. If Shut Down At End Of Report Period, Estimated Date of Startup:
26. Units In Test Status (Prior to Commercial Operation):

	Forecast	Achieved
INITIAL CRITICALITY		
INITIAL ELECTRICITY		
COMMERCIAL OPERATION		

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-309

UNIT Maine Yankee

DATE 810410

COMPLETED BY D. M. Bernard

TELEPHONE 617-872-8100 X2390

MONTH MARCH, 1981

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	814	17	820
2	816	18	818
3	815	19	819
4	816	20	816
5	819	21	816
6	814	22	817
7	696	23	817
8	810	24	816
9	815	25	815
10	815	26	819
11	817	27	819
12	816	28	816
13	817	29	816
14	817	30	816
15	815	31	817
16	817		

INSTRUCTIONS

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

(9/77)

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-309
UNIT NAME Maine Yankee
DATE 810410
COMPLETED BY D. M. Bernard
TELEPHONE 617-872-8100 X2390

REPORT MONTH MARCH, 1981

No.	Date	Type[1]	Duration (Hours)	Reason[2]	Method of Shutting Down Reactor[3]	Licensee Event Report #	System Code[4]	Component Code[5]	Cause & Corrective Action to Prevent Recurrence
L. R. to 80%	3/7/81 3/8/81	S	23.82	B	1	NA	HA	VALVEX-C	Routine load reduction to perform monthly surveillance testing of the turbine valves.

1
F: Forced
S: Scheduled

2
Reason:
A-Equipment Failure (Explain)
B-Maintenance or Test
C-Refueling
D-Regulatory Restriction
E-Operator Training & License Examination
F-Administrative
G-Operational Error (Explain)
H-Other (Explain)

3
Method:
1-Manual
2-Manual Scram.
3-Automatic Scram.
4-Other (Explain)

4
Exhibit G - Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161)

5
Exhibit I - Same Source

(9/77)

DOCKET NO. 50-309

UNIT Maine Yankee

DATE 810410

COMPLETED BY D. M. Bernard

TELEPHONE 617-872-8100 X2390

REPORT MONTH MARCH, 1981

SUMMARY OF OPERATING EXPERIENCES

The plant was at full load at the beginning of the month.

On March 7, a load reduction to 80% was performed in order to complete routine monthly surveillance testing of turbine valves and a check of condenser sacraficial anodes.

The plant returned to full power on March 8 and remained at full load for the rest of the month.

Design Packages Completed During 1980

Plant Alterations

PA 8-78	Primary Water Storage Tank Penetration for Level Indication
PA 9-78	Main Control Board Vacuum Priming Tank Pressure Indicator
PA 2-79	Oil Retention Walls in Turbine Building
PA 6-79	CO_2 Fire Suppression for Turbine Generator Bearings
PA 8-79	General PaR Modifications
PA 10-79	Negative Sequence Relay
PA 11-79	Remote Trip for MG - 1A and 1B
PA 2-80	Quench Tank Relief Valve
PA 3-80	Stack Noble Gas Release Rate Measurement-1980 Requirements
PA 4-80	Loss of Instrument Bus Annunciation
PA 5-80	MG-1A and 1B Output Breaker Trip Audible Alarm
PA 10-80	New Maintenance Shop and Spare Transformer Pad
PA 11-80	Loss of Instrumentation Due to Failure of Non-Vital Bus
PA 12-80	Loss of 120 VAC Distribution Panel DP/PAC Alarm
PA 16-80	Emergency Power for the Emergency Notification System
PA 17-80	Air Conditioning Control Logic Revision
PA 21-80	Sprinkler System for New Maintenance Shop

Plant Design Change Requests

PDCR 5-78	Fire Rated Dampers for Areas Protected by CO_2
PDCR 2-79	Primary Water Hose Station in Containment
PDCR 3-79	Steam Generator Blowdown Modification
PDCR 4-79	Emergency Diesel Generator Room Fire Protection Modifications
PDCR 6-79	Fire Protection System Detection, Control, and Instrumentation Modification
PDCR 7-79	Halon Fire Suppression System for Control Room Cable Trays
PDCR 8-79	Reactor Coolant Pump Lube Oil Collection System
PDCR 9-79	Sprinkler Systems
PDCR 10-79	Fire Hose Stations
PDCR 11-79	AFFF Fire Suppression System
PDCR 12-79	Fire Pump House Modifications
PDCR 1-80	Environmental Qualification Upgrade of MY S/G Level Transmitters
PDCR 2-80	Post LOCA Cable and Electrical Penetrations Upgrade
PDCR 3-80	Elimination of RCP Loop Isolation Valve Interlocks
PDCR 7-80	Isolation Valve Upstream of SIA-A-12
PDCR 8-80	Installation of Hydrant Lateral Block Valves

Engineering Design Change Requests

EDCR 79-21	SIS Actuation of Non-Essential Containment Isolation Valves
EDCR 79-31	Primary Coolant Saturation Monitor
EDCR 79-33	Power Supply Change for Pressurizer PORV Solenoids
EDCR 79-38	Safety/Relief Valve Accoustic Accelerometers
EDCR 79-42	Auto Initiation of the Auxiliary Feedwater System - Control Grade
EDCR 79-43	Auxiliary Feedwater Indication - Control Grade
EDCR 79-56	Overpressurization Mitigation System

EDCR 80-1	Safety Injection Trip for Pressurizer Proportional Heaters
EDCR 80-4	Maine Yankee Pipe Rupture Restraints
EDCR 80-19	Low Steam Generator Pressure Trip on Main Feedwater Valves

PA 8-78

Primary Water Storage Tank Penetration for Level Indication

This plant alteration involved the installation of an additional nozzle in the Primary Water Storage Tank for a level indicator sensing line.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 9-78

Main Control Board Vacuum Priming Tank Pressure Indicator

In order better enable the control room operating personnel to observe vacuum on the circulating water system during normal operation and pump start-up, remote indication was installed. The installation consisted of a pressure transmitter at the vacuum priming tank with an analog meter on the main control board. Pressure to the transmitter is supplied by an existing instrument line.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 2-79

Oil Retention Walls in Turbine Building

Based on a NRC Fire Protection Inspection, Maine Yankee constructed oil retention walls around the turbine seal oil unit and the turbine lube oil storage tank. The seal oil unit retention wall is capable of holding the entire contents of the unit plus 10 percent for fire fighting agent for a total of 302.5 gallons. The turbine lube oil storage tank retention wall is capable of holding the entire contents of the tank plus 10 percent for fire fighting agent for a total of 15,950 gallons. These walls will control the spread of fire caused by the ignition of oil leaking from the tank and seal oil unit thus reducing damage to the turbine building and enhancing the effectiveness of the fire fighting agent.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 6-79

CO_2 Fire Suppression for Turbine Generator Bearings

Based on a NRC Fire Protection Inspection, Maine Yankee installed a carbon dioxide gas suppression system for the turbine generator bearings. The existing six ton Cardox storage tank was utilized as it is capable of providing double shot protection for the largest hazard involved. A new header with five master valves was installed at the Cardox storage unit.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 8-79

General PaR Modifications

In an effort to eliminate recurring problems in the refueling machine, a number of modifications were performed which upgraded our equipment to the current production models. These changes were: replacement of air actuated cylinders with air over water cylinders, provision of interlocks on the mast, increase bridge speed, jog speed capability on bridge, trolley and hoist drives and a digital position indication system for the spent fuel pool crane.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 10-79

Negative Sequence Relay

This alteration added a negative sequence time overcurrent relay to augment the existing negative sequence relay by providing protection against long time-low value unbalance conditions. The relay has a metered output which provides continuous monitoring of generator unbalance as indicated by negative sequence currents via a meter located on the 345 KU section of the electric control board. The relay also provides a signal to an annuciator which alarms on high generator negative sequence.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 11-79

Remote Trip for MG - 1A and 1B

This alteration provided the control room operators with a means of tripping the output breaker trip coil of the control rod drive motor-generators in the unlikely event that the reactor protective system or the manual trip systems fail to. The change was accomplished by adding a remote pushbutton switch for each of the two motor-generators on the main control board and wiring them in series with the load-off switches on the M-G set control panels.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 2-80

Quench Tank Relief Valve

After the addition of the reactor vessel vent system, which discharges to the pressurizer quench tank, a relief valve was installed on the quench tank. The relief valve will open when more gas is discharged to the quench tank than can be drawn off by the hydrogenated vent system. At 75 psig, the relief valve will open to relieve small amounts of gas thus protecting the rupture disc. After a release the valve will reseat leak tight because it has a soft seat. An isolation valve has been installed upstream for the possibility of leakage and for future removal and testing of the relief valve.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 3-80

Stack Noble Gas Release Rate Measurement-1980 Requirements

As a requirement of NUREG-0578, Maine Yankee installed a monitor and detector to measure noble gas release from the primary vent stack. The detection is located on a sample line leading from the stack to the air particulate detector. The monitor is mounted in the control room radiation monitoring cabinet. The manufacturer of the system has supplied graphs which will allow the control room operators to convert from counts per minute to effective release rate.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 4-80

Loss of Instrument Bus Annunciation

In response to IE Bulletin 79-27, Maine Yankee installed an isolating relay which trips upon loss of instrument bus power thus causing an annunciator to light. The annunciator will function beyond a loss of instrument power because its power is supplied by a battery bus.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 5-80

MG-1A and B Output Breaker Trip Audible Alarm

This alteration concerned the addition of an audible alarm to monitor the opening of the output breakers for the rod drive motor-generators. Two indicating lights on the RPS Trip Status Panel energize the audible alarms when the output breakers open. The alarms may be silenced by cancel switches mounted on the RPS Trip Status Panel. The alarms flag the control room operator as to when the output breakers open in order for him to take corrective action in a timely manner and prevent a possible plant trip.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 10-80

New Maintenance Shop and Spare Transformer Pad

Due to a need for a facility on the "clean" side for pipe fabrication, welding and general maintenance, a new shop was constructed on the southeast corner of the turbine building. In addition, a pad was installed for Maine Yankee's spare main transformer. This installation included provisions for cables which supply fan power and instrumentation to the transformer.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 11-80

Loss of Instrumentation Due to Failure of Non-Vital Bus

This alteration consisted of changing the power supplies for specified instrumentation, involved in the loop fill and drain systems, as indicated by IE Bulletin 79-27. The powers supplies were changed from the 120 VAC instrumentation bus to the 120 VAC distribution panel DP/PAC. This increases the assurance of being able to fill and drain the three reactor coolant loops with the two available systems, the fill and drain system and the charging and letdown system. The power supplies for the instrumentation of these two systems are now sufficiently divided to ensure that upon loss of a non-vital bus the capability to fill and drain still exists. Even upon the assumption that either of the two emergency buses are lost, both of the non-vital buses may be switched to the good emergency bus.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 12-80

Loss of 120 VAC Distribution Panel DP/PAC Alarm

This alteration involved changing the metrascope power supplies from panel DP/IAC to panel DP/PAC to ensure the availability of control rod position indication. This alteration also added alarm annunciation for "Loss of 120 VAC Emergency Panel DP/PAC."

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 16-80

Emergency Power for the Emergency Notification System

As a result of IE Bulletin 80-15, Maine Yankee changed the telephone system power sypply from a non-emergency source to an emergency source. This was done so that in the event of a loss of offsite power while the plant is off line, the emergency notification system would still be operable.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 17-80

Air Conditioning Control Logic Revision

Due to an error in the original design of the control room, laboratory, and office air conditioning unit controls, cold weather conditions would cause the units to lock out and remain inoperable. Jumpers were added across appropriate relay contacts to allow the air conditioning units to operate all year round without any interruptions due to cold weather.

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PA 21-80

Sprinkler System for New Maintenance Shop

Under PA 10-80, a new welding shop was constructed at the Maine Yankee site. This alteration documents the installation of the automatic sprinkler system in that shop. This type of fire protection was recommended by the American Nuclear Insurers because of the location of the shop (adjacent to the oil storage room) and the nature of work in the shop (welding and burning).

This alteration did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 5-78

Fire Rated Dampers for Areas Protected by CO_2

In accordance with Staff Position #5 Maine Yankee Report Section 3.1.8, three-hour fire rated dampers were installed to compliment existing dampers in the following five areas: (1) Cable Vault, (2) Protected Cable Tray Room, (3) Unprotected Cable Tray Room, (4) Containment Mote-Control Center, and (5) Containment Electrical Penetration Area inside containment.

The containment electrical penetration area inside containment and the protected cable tray area exhaust were already equipped with CO_2 actuated dampers.

Additional CO_2 actuated dampers were installed between the unprotected switchgear room and the protected switchgear room, the protected switchgear room and the protected cable tray room, the protected cable vault and the chemistry laboratory, and on the exhaust and supply fans on the top floor of the containment motor control center.

Self-contained dampers which are actuated by fusible links were installed between the protected switchgear room and the unprotected switchgear room, the protected cable tray room and the unprotected cable tray room, the protected cable tray room and the control room, and the diesel fire pump room and the electric fire pump room.

This change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 2-79

Primary Water Hose Station in Containment

Based on an NRC Fire Protection Inspection, Maine Yankee installed two hose stations connected to the primary water system. These two stations (one located on the southeast corner of the pressurizer cubicle on the charging floor and one located at the end of the elevator ramp in the lower level outer annulus) meet the commitment as stated in 3.1.2 of the Safety Evaluation Report attached to Amendment 37 of the Facility Operating License. The provisions of the commitment were to provide fire hose station(s) with sufficient hose to reach all cable locations and areas where combustible liquid could accumulate.

This change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 3-79

Steam Generator Blowdown Modification

This Plant Design Change increased the capacity of the steam generator blowdown system in order to allow more rapid reduction of steam generator chloride levels during and following a condenser tube leak. The increased flow was accomplished by replacing the existing one inch blowdown piping with two inch piping. The air operated containment isolation valves were replaced with two inch valves. The existing penetration was rebuilt to handle the two inch lines. The blowdown tank and cooler were not affected by the change, nor were the blowdown valves.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 4-79

Emergency Diesel Generator Room Fire Protection Modifications

Based on a NRC Fire Protection Inspection, Maine Yankee made the following changes to the Emergency Diesel Generator Room.

Berms were constructed around the fuel oil day tanks capable of holding the entire contents of the tanks plus ten percent for fire fighting agents.

The gage glasses on the fuel oil day tanks were replaced with level gages.

The vents from the Emergency Diesel Generator integral fuel tanks were piped to the outside atmosphere.

This design change did not present an unreviewed Safety Question as specifiec in 10CFR50.59(a)(2).

PDCR 6-79

Fire Protection System Detection, Control, and Instrumentation Modification

Based on a NRC Fire Protection Inspection, Maine Yankee installed additional fire detection, control, and instrumentation equipment.

For the purposes of detection, ionization type smoke detects were installed at twenty-two locations, duct detectors were installed in four critical ducts, air flow switches were installed in the battery room exhaust ducts, heat detectors were installed in three areas, and a photoelectric detector was installed in one location.

For the purposes on system control, ionization type detectors were installed in five locations and duct detectors were installed in two locations.

A new fire alarm control panel was mounted in the Control Room and wired to the new detector zones, tripping circuits, fan shut-downs, air flow trouble alarms, and annunciators. The panel has an indicator light for each detector which identifies the detector in an alarm condition.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 7-79

Halon Fire Suppression System for Control Room Cable Trays

Based on a NRC Fire Protection Inspection, Maine Yankee installed an automatic Halon fire suppression system to protect the cables in the control room cable trays. The installation consists of two 33 pound Halon 1301 cylinders and two discharge nozzles in the cable chase. Access panels covering the cable chase were removed, chalked, and replaced to prevent loss of the Halon agent. Detection and control functions were accomplished under PDCR 6-79 (Fire Protection System Detection, Control, and Instrumentation Modification).

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 8-79

Reactor Coolant Pump Lube Oil Collection System

Based on a NRC Fire Protection Inspection, Maine Yankee welded two inch steel curbings around the base of the three reactor coolant pump motor "top hats" to contain any leakage of bearing oil. This prevents the oil from running down the pump casings and contacting hot reactor coolant piping. The curbings were drilled and gravity flow piping systems were installed to conduct oil from the "top hat" areas to 55 gallon drums located below the pumps. The drums are covered and vented.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 9-79

Sprinkler Systems

Based on a NRC Fire Protection Inspection, Maine Yankee installed the following: a fixed, manually-actuated, directed water spray system to cover all cables in the protected cable vault, an automatic sprinkler system to protect the component cooling pumps, a preaction sprinkler system in the containment spray pump cubicles, and an automatic sprinkler system in the RCA Storage Area. The turbine hall sprinkler system was also expanded to provide directed protection to the isophase bus duct penetration.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 10-79

Fire Hose Stations

Based on a NRC Fire Protection Inspection, Maine Yankee installed additional fire hose stations to provide coverage to the protected and unprotected cable tray rooms, the Primary Auxiliary Building, the containment penetration areas, the fuel building and RCA Storage Area, the turbine building, the containment spray building, the ventilation equipment and personnel airlock area, the unprotected switchgear room, the auxiliary feedwater pump area, and the main steam and feedwater valve area.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 11-79

AFFF Fire Suppression System

Based on a NRC Fire Protection Inspection, Maine Yankee modified the deluge systems protecting the turbine lube oil reservoir and the hydrogen seal oil unit to utilize Aqueous Film Forming Foam. An AFFF deluge system was also installed in each of the Emergency Diesel Generator rooms to provide protection to the day fuel oil tanks and the integral fuel oil tanks.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 12-79

Fire Pump House Modifications

Based on a NRC Fire Protection Inspection, Maine Yankee modified the Fire Pump House to provide separation between the electric fire pump and the diesel fire pump. A three hour rated fire wall was built around the electric fire pump, the floor drains were modified to prevent fuel oil from entering the electric fire pump enclosure, and the fuel oil return line was rerouted so that it would not enter the new electric fire pump enclosure.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 1-80

Environmental Qualification Upgrade of MY S/G Level Transmitters

As a result of I E Information Notice 79-22, Maine Yankee committed to upgrading six steam generator level transmitters to Post LOCA type environmental capability. The affected transmitters pertained to the Main Feedwater Control System only. It was determined that an additional six transmitters, which give direct indication of the primary system heat sinks level sta ~s, should also be included in the upgrade.

The upgrade involved replacement of the oscillator amplifiers, the external capacitors, and some internal wiring with qualified components along with mounting changes and the addition of an environmental, hermetic seal.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 2-80

Post LOCA Cable and Electrical Penetration Upgrade

This design change was implemented to provide two post LOCA electrical penetrations for the newly qualified S/G level transmitters (PDCR 1-80) and as the necessary qualified interface for other TMI - related wiring.

This design change did not present an unreviewed Safety Question as specified by 10CFR50.59(a)(2).

PDCR 3-80

Elimination of RCP Loop Isolation Valve Interlocks

Prior to the modifications resultant of this design change, there were ten interlocks governing operation of each Reactor Coolant Pump and its associated loop isolation valves. The function of two of these interlocks was to prevent the startup of the Reactor Coolant Pump if the cold leg isolation valve was closed and the bypass valve opened.

These interlocks were originally installed to prevent a reactivity increase due to flow surge and cold water injection. This situation could have happened when bringing on the third loop after two loop "free-floating" operation. Since two loop operation is prevented by plant Technical Specification, the interlock schemes were deemed unnecessary. By bypassing the interlocks, it is much easier and less time-consuming to restart a Reactor Coolant Pump in the event of a pump trip.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 7-80

Isolation Valve Upstream at SIA-A-12

The purpose of this design change was to provide a means of isolating SIA-A-12 (loop one safety injection tank accumulator fill valve) during plant operation in order to perform maintenance. This was accomplished by adding a globe valve to a one inch line located in the outer annulus.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

PDCR 8-80

Installation of Hydrant Lateral Block Valves

As a result of Appendix R to 10CFR50, Maine Yankee installed block valves between the yard fire main and five of the outside hydrants. This change was necessary to permit isolation of outside hydrants from the yard fire main without interrupting the fire water supply to any area containing or presenting a fire hazard to safety-related or safe-shutdown equipment.

This change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

EDCR 79-21

SIS Actuation of Non-Essential Containment Isolation Valves

In response to I & C Bulletin 79-06B, Maine Yankee implemented this change which provides for all non-essential containment isolation valves to receive a closure signal from the safety injection actuation system in addition to the existing containment isolation signal. This required the addition of two new auxiliary relays, one per safety train, which receive a safety injection actuation signal. These relays are used to actuate the old containment isolation signal relays. All essential containment isolation valves were removed from these relays and added to a new containment isolation signal relay actuated by the CIS only. The Systems Engineering Group at Yankee Nuclear Services Division developed a list of forty-five non-essential valves. The EDCR did not address the capability of re-opening any latching D. C. solenoids. That item is being addressed in another design change.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

EDCR 79-31

Primary Coolant Saturation Monitor

As a result of NUREG-0578, Maine Yankee installed a Primary Coolant Saturation Monitor. The Monitor accepts main coolant pressure and temperature signals as inputs to provide continuous indication of the temperature or pressure margins to saturation. This relieves the operator of the task of manual calculations using the steam tables. A digital readout of saturation condition is located on the main control board. An analog output of T margin supplies signals to the plant computer. Alarm contacts close as T margin decreases and alarms light at local annunciators to indicate "low margin" and "loss of steady state".

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

EDCR 79-33

Power Supply Change for Pressurizer PORV Solenoids

As a result of NUREG-0578, Maine Yankee modified the power supplies to the pressurizer Power Operated Relief Valves (PORVs) and their associated block valves in order to gain the advantage of having them powered from either an offsite power source or an emergency power source when offsite power is not available. Prior to this modification each block valve was powered from an emergency power supply, however, the PORV solenoids were powered from a non-emergency power supply. The current configuration (since implementation) is that each PORV is supplied by the same emergency power source as its associated block valve.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

EDCR 79-38

Safety/Relief Valve Accoustic Accelerometers

In accordance with NUREG-0578, Maine Yankee installed a monitoring system on its pressurizer Power Operated Relief Valves (PORVs) and Safety Valves (SVs). The noise signal provided by flow through the monitored valve is sensed by an accelerometer transducer. There is one transducer clamped on each PORV and one clamped on the common header of the three safety valves. The transducers transmit signals to the control modules located in the control room via charge converters. The control modules are located in the Loose Parts Monitoring cabinet. Each channel module includes an analog meter for valve position indication (0-100% open). The panel also includes a master audio alarm panel for annunciation as well as indicator lights on each channel module. As the noise generated by flow through the valve increases proportionally with valve opening, signal strength is used to indicate approximate percentage of valve opening.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

EDCR 79-42

Auto Initiation of the Auxiliary Feedwater System - Control Grade

In accordance with NUREG-0578, Maine Yankee modified the controlling circuitry of the electric driven auxiliary feedwater pumps to allow the pumps to start automatically on a delayed one out of three logic signal from a low water level signal in any one steam generator. The low S. G. water level signals were taken from the reactor regulating system. The installed system is single failure proof with the capability for on-line testing. The system was also designed to allow the operator to bypass a failed or inoperative train of the actuator logic provided that the other train is not in test. Also, an annunciator has been incorporated to indicate an automatic AFWS start signal has been generated when the pumps have started, when the system is in test, or when the system has been bypassed.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

EDCR 79-43

Auxiliary Feedwater Indication - Control Grade

As a result of NUREG-0578, Maine Yankee has added an indication of auxiliary feedwater flow to each steam generator. Clamp-on ultrasonic flow sensors were mounted to each auxiliary feedwater line upstream of the auxiliary feedwater valve and bypass line. The sensors provide signals to flow computers located in the auxiliary feed pump room which in turn provides signals to indicators mounted on the main control board. The indicators transmit signals to the main plant computer when flow is sensed.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

EDCR 79-56

Overpressurization Mitigation System

During the January, 1980 outage, Maine Yankee modified its existing low temperature Overpressurization Mitigation System (OMS) by adding an annunciator on the main control board which provides for the alerting of the operator to properly align (via operating procedures) the OMS for the correct mode of plant operation. This "minimum pressurization/temperature requirements" window alerts the operator to arm the OMS when Reactor Coolant System (RCS) temperatures fall below 225°F and to disarm the OMS when the RCS temperatures exceed 300°F. In addition, this alarm logic will extinquish only when the OMS valves are properly aligned.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

EDCR 80-1

Safety Injection Trip for Pressurizer Proportional Heaters

Due to a NRC letter to all Operating Nuclear Power Plants, "Discussion of Lessons Learned Short-Term Requirements," Maine Yankee modified its pressurizer proportional heater circuitry. Maine Yankee's two heater banks are normally powered from Emergency Buses. In the event of a loss of off-site power, these banks are normally shed from the buses. The operator may manually reconnect these heater banks to the Emergency Buses, if sufficient diesel generator capacity is available. However, since pressurizer heaters are classified as non-nuclear safety, the above mentioned letter required that they be automatically shed from the emergency power source upon occurance of a safety injection actuation signal, thus enhancing the integrity of the emergency buses during an accident. Maine Yankee accomplished this change by taking a safety injection actuation signal from the lock out relays 86-SIAS-AZ and 86-SIAS-BZ located in the main control board and connecting it to the circuit breaker control circuitry for the heaters also located in the main control board.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

EDCR 80-4

Maine Yankee Pipe Rupture Restraints

In the event of a hypothetical full quillotine rupture of a reactor coolant pipe at the vessel nozzle, the resulting pressurization of the reactor cavity would produce an asymmetric load on the reactor vessel. Maine Yankee was not originally designed for this component of the LOCA loading since it was not identified until 1975. Following a re-evaluation of the structural integrity of the plant incorporating asymmetric loads, Maine Yankee installed pipe rupture restraints near the reactor coolant pipe penetrations of the shield wall. This allows the use of simplified analyses to demonstrate structural integrity of the reactor coolant system during a LOCA.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).

EDCR 80-19

Low Steam Generator Pressure Trip of Main Feedwater Valves

Failure of Maine Yankee's Main Feedwater Reg Valves (MFWRV) and/or MFWRV bypass valves to close their post-reactor-turbine trip positions results in the potential for overpressurization of the reactor containment and/or a return to criticality following a main steam line break. To prevent this occurance Maine Yankee added a contact in the control loop for both the MFWRV and the MFWRV bypass valve that will interrupt power to the E/P controllers for those valves. This contact was taken from the same 2/4 logic (Low Steam Generator Pressure) that drives the excess flow check valves. A relay with a bypass control was added to provide isolation between the 2/4 logic and MFWRVs. This change assures that the affected steam generator will isolate all main feedwater flow to the break.

This design change did not present an unreviewed Safety Question as specified in 10CFR50.59(a)(2).