



CONNECTICUT YANKEE ATOMIC POWER COMPANY

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December 16, 1985

Docket No. 50-213
A05384

Mr. Richard W. Starostecki, Director
Division of Reactor Projects
U.S. Nuclear Regulatory Commission, Region 1
631 Park Avenue
King of Prussia, Pennsylvania 19406

References: (1) R. W. Starostecki letter to J. F. Opeka dated
November 15, 1985.

Gentlemen:

Haddam Neck Plant
Response to Meeting Report No. 50-213/85-22

Reference (1) transmitted Meeting Report No. 50-213/85-22 which dealt with auxiliary feedwater (AFW) system wiring problems recently identified at Haddam Neck and requested a detailed description of and schedule for our corrective actions on this issue. Specifically, actions for (1) improved design change installation controls, (2) improved testing requirements, and (3) verification of similar previous modifications, were requested.

In response to Items (1) and (2), it should be noted that our present procedures concerning design, installation and testing are significantly improved over what were in place at the time of the miswiring. In particular, NEO 7.03, Preoperational Testing of Plant Modifications, which was issued 11/01/84, requires a phased testing approach which would have detected the AFW miswiring problem before the system was returned to service. However, we have identified several procedures which could use clarification to ensure that installers and testers have sufficient information to correctly perform their tasks.

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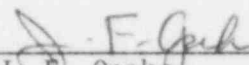
These procedures, the intent of the changes, and the dates for completing the changes are included in Attachment 1.

In response to Item (3), a review group was convened to review Plant Design Change Requests (PDCRs) implemented from 1979 to 1984 to ensure that either post-modification testing or subsequent surveillance testing or operation was adequate to ensure that the modification was performed correctly. This review group identified eight PDCRs where additional testing was recommended. Testing was recommended in cases where the review group did not have sufficient evidence showing that identified potential errors could not mislead operators. These modifications will be tested during the refueling outage scheduled to begin January 4, 1986, unless new evidence presented to the review group shows that the identified testing is unnecessary. Details of this review are included in the review group report (Attachment 2).

My staff is available to answer any questions you may have on this issue. This concludes our planned written response to Meeting Report No. 50-213/85-22.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY



J. F. Opeka
Senior Vice President

Attachments

Attachment 1

<u>Procedure No.</u>	<u>Title</u>	<u>Change</u>	<u>Date</u>
NEO 5.18	Preparation, Issuance and Control of Project Descriptions	(1)	01/31/86
BC-A-2	Control of Betterment Construction Work Activities	(2)	04/01/86

- (1) This is a new procedure, which will say, in part, "Sufficient detail must be provided to insure the installer can identify individual components... layout drawings should be prepared when required to define identity."
- (2) This procedure will have a step saying, "Determine if the project documents (i.e., drawings, specifications and instructions) contain sufficient detail to insure personnel can distinguish and identify individual components to prevent cross-wiring, cross-piping, and mislabeling components."

ATTACHMENT 2

CONNECTICUT YANKEE
REVIEW OF PLANT DESIGN CHANGE REQUESTS
FOR
ERRORS THAT COULD MISLEAD OPERATORS

Date December 6, 1985

CONNECTICUT YANKEE
REVIEW OF PLANT DESIGN CHANGE REQUESTS
FOR
ERRORS THAT COULD MISLEAD OPERATORS

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INTRODUCTION

On October 31, 1985, the USNRC and CYAPCo met in Haddam Neck Management Meeting 50-213/85-22 to address recent wiring problems with the auxiliary feedwater system. In that meeting, CYAPCo proposed to perform the following action:

"Plant Design Changes will be reviewed to determine which design changes have the unique characteristic whereby a component installation error could significantly mislead personnel during an emergency. If adequate component testing was not completed during its installation, the component testing will be completed during the next refueling outage scheduled for January 1986".

In that meeting, discussion addressed the need to look for problems internal to systems that are required in the Emergency Operating Procedures (EOP's). The CYAPCo proposal, as enhanced by this discussion, serves as the basis for this review.

To accomplish this review, the Connecticut Yankee Plant Superintendent requested that a Review Group be assembled.

2.0 METHOD

Before the Review Group began the review of specific design changes, a special procedure was developed.

The first step, called "screening" was performed to select those Plant Design change Requests (PDCR's) that have a potential to contain errors that could mislead operators. This was performed in a conservative manner.

Next, the selected PDCR's were scrutinized by the Review Group in a series of meetings. The meetings allowed good interaction between members, and the necessary disciplines were represented. In these meetings, the potential for misleading conditions was pursued freely, and a thoughtful "what if?" environment was maintained. Information was acquired verbally during the meetings to aid discussions. In addition to preoperational testing, the Review Group was often assured of adequate design change implementation by the performance of surveillance testing and operational use. When necessary, topics were tabled for subsequent presentation of new findings by a member.

Lastly, testing recommendations were developed when there was not sufficient evidence available (documented or otherwise known to members) to ensure that identified potential errors that could mislead operators do not exist.

3.0 RESULTS

3.1 Screening

All PDCR's approved for implementation from 1979 to 1984 underwent the screening process. Of the 355 PDCR's from this period, 101 were selected for further review. Table 1 lists all PDCR's, and identifies those selected for further review.

3.2 Specific PDCR Reviews

The detailed review of the 101 selected PDCR's resulted in a list of PDCR's that may involve errors that could mislead operators. Table 2 lists these PDCR's and describes testing to determine whether or not the identified potential errors exist.

3.3 Observations/Comments

During the course of this review, the Review Group members recognized the limitations of this kind of review. In such a review for subtle problems, it is improbable that all of the problems will be uncovered. This is because it seeks to identify conditions that are generally not apparent, by taking a highly focused viewpoint. In taking this view, a broad variety of plant conditions and malfunctions must be considered, and the human factors aspect (the operator's perception) requires that much judgement be applied. With these requirements, problems may not be recognized.

Once a potential error that could mislead operators is identified, however, the Review Group felt that the concern could be dispositioned by current knowledge/documentation or future testing with confidence.

The Review Group identified testing needs where it was unable to present sound evidence that would demonstrate that design change errors do not exist. The Review Group will remain available to review new evidence which shows that the identified testing is unnecessary.

4.0 CONCLUSIONS/RECOMMENDATIONS

4.1 The testing listed in Table 2 should be performed to determine whether or not certain potential errors exist.

4.2 Due to the nature of this kind of review, it is a very difficult task to identify all potential design change errors that could mislead operators.

TABLE 1
PDCR's REVIEWED

NOTE: 1) PDCR's that were selected for further review by the screening process are identified by asterisks

2) A missing title indicates that the PDCR was cancelled

PDCRNO	TITLE
202	SWITCHGEAR VENTILATION IMPROVEMENT
203	
204	OFFICE FIRE ESCAPE
205 *	FIRE DETECT EQUIP - SEAL CABLE PEN
206	VENTING OF SPENT FUEL RACKS
207 *	TURBINE OVERSPEED PEAK RESET CIRCUIT
208	SERVICE AIR TO CONTROL AIR CROSS
209	
290	REROUTE OF CHARGING PUMP SUPPLY CABLE
291 *	CY PLANT SITE SECURITY SYSTEM INSTALL
292	SITE SECURITY SYSTEM INSTALL
293	VENTING OF SPENT FUEL STORAGE CELLS
294	RHR PURIFICATION FLOW CONTROL VALVE
295	SERVICE WATER INTAKE STRUCTURE PILES
296	SFB SECURITY CABLES
297	CYCLE 9 REFUELING
298	PZR RELIEF/SAFETY VLV DISCHARGE PIPE
299	CAR FAN FILTER CAPACITY
300 *	DIESEL SEQUENCING TIMERS
301	SG BLOWDOWN LINE DISCHARGE RELOCATE
302 *	SECURITY SYSTEM EHR POWER SUPPLY
303	HOD TO SFB CRANE, CR5-1A HOIST
304 *	EMERGENCY DIESEL GENERATOR ALARM HOD
305 *	HAH TRANS & GEN PROTECT & CENTRL HOD
306	CONTAINMENT FAN FILTER TIMERS
307	WASTE OIL SYSTEM MODIFICATION
308	SFP PURIFICATION RETURN SAMPLE POINT
309	REPLACEMENT OF DRAIN LOOP VALVES
310	SHOULDER REPLACEMENT
311	WTT EFFLUENT PIPING MODIFICATION
312 *	EMERG DIESEL GEN BUS POTENTIAL TRANS
313 *	CAR FAN CHAR FILT HIGH TEMP DETEC WIRE
314 *	VITAL AREA PROTECTION OF CONTROL ROOM
315	CORE HOLES IN CONTROL ROOM FLOOR
316	COATING EXPOSED STRUCTURAL STEEL
317	FIRE RATED BARRIERS
318	CURB AND SPILL BARRIERS
319 *	DIST TEMPERATURE IND ALARM & CONTROL
320	SECONDARY H2 MONITORING SYSTEM
321 *	DIESEL FIRE PUMP REMOTE ALARM
322 *	MASTER CYCLER LOSS OF CNTRL POWER ALRM
323	DIESEL AND ELECTRIC DRIVEN FIRE PUMPS
324	GEN H2 MONITOR PIPE AND VALVE MONITOR
325 *	INST AIR SUPPLY LOW PRESSURE ALARM
326 *	FIRE SUPPRESSION SYS ADDITIONS & MODS
327	CAR FAN SH RETURN HEADER ISO VALVES
328	DIESEL ROOM HEATERS
329	HAHAP CRANE DUAL PZR GRIPPER AIR CYLND
330 *	CONTROL AIR HEADER DEW POINT INDICATORS
331 *	RAJIST SYS TANK LOW LVL OVERRIDE SWICH
332	AUX FEEDPUMP BEARING OIL COOLING SYS
333 *	COMBUSTIBLE GAS DETECTION SYSTEM
334	ADT EVAP EFFLUENT DISCHARGE PIPING MOD
335	LPST SYSTEM SUCTION LINE SUPPORT MOD
336	FLOOR E S CHANGE/ADD - FIRE PROTECT
337 *	DETECTION OF INADEQUATE CORE COOLING

PDCRHO	TITLE
338 *	PORV & SV POSITION INDICATION SYSTEM
339 *	AUX FEEDWATER FLOW IND, THI 2.1.78
340 *	CONTAINMENT ISOLATION MODIFICATION
341	ON SITE TECHNICAL SUPPORT CENTER (CCTV)
342 *	ENER POWER TO PZR HEATERS
343	HYPOCHLORITE SYSTEM - PUMP LOGIC MOD
344 *	CONTAINMENT ISOLATION RESET MOD
345 *	LEVEL ALARM ON MAIN STACK
346	RELOCATION OF 12" FIRE PROTECTION LINE
347 *	RCS VENTING SYSTEM
348	CHHH ELECT PENET REPLCHNT PHASE AIB
349 *	UNIT AND FLOOR DRAIN SURF EFFLUENTS
350	HSR TUBE BUNDLE REPLACEMENT
351	HIGH PRESS FW HEATER REPLACEMENT
352	INSTALL ISOLATION VALVES IN FIRE MAIN
353	PRESSURIZER CAPILLARY VALVES
354	PRIMARY VENT STACK DRAIN CHECK VALVES
355 *	NEW 319 GENERATOR STEP-UP TRANSFORMER
356 *	UNDER VOLTAGE PROT AND LOAD SHEDDING
357 *	CONTAINMENT ELECT PENET REPLACE PHASE C
358	VENT HEADER DRAIN TANK
359	CONTAINMENT BREATHING AIR SYSTEM
360	CONTAINMENT JIB CRANE
361	CONT CTRL AIR COMP & RECV PIPE/STAND
362 *	CONTAINMENT ISOLATION MOD PHASE II
363 *	PORV LIMIT SWITCH REPLACEMENT
364	MAIN STEAM PICV - 1206A.B
365	RCP MOTOR COLLECTION SYSTEM
366	GUARDHOUSE AIR CONDITIONER
367 *	GEN H2 CONDITION MON REMOTE SAMPLING
368	RCP SEAL WATER SUPPLY
369	REPLACE 4-12" FEEDWATER CHECK VALVES
370 *	DETECTION OF INADEQUATE CORE COOLING
371 *	H2O LEVEL/H2Z/PRESS IN CONT, THI 2.1.8
372	CONVEX AGC/SCADA REMOTE INSTALLATION
373 *	WELL WATER PUMP LOAD MONITORING
374 *	SAFETY SYSTEM LOCKOUT INDICATION
375	CCC-CV-721 REPLACEMENT
376	CYCLE 10 REFUELING
377 *	CONTAINMENT HIGH RANGE RADIATION MONITOR
378	STEAM GENERATOR BLOWDOWN TANK VENT LINE
379 *	TURBINE CONTROL CIRCUIT
380 *	RCP CCH AND SEAL WATER RETRN ISOLATION
381	4160V BUS 1-1A, 1B AUTO/MANUAL TRANSFER
382	THE INPUTS TO THE DATA LOGGER
383 *	SAFETY INJECTION LOGIC MODIFICATION
384 *	AUTOMATIC INITIATION AUX FEEDWATER
385 *	TYPE II-2 SWITCH VENT POSITION IND
386	CHANGE SETPOINT OF RG-IV-1156C
387	SPEENT RESIN STORAGE FACILITY
388	PRIMARY VENTILATION STACK SPRAY RING
389	CHARGNG PUMP RECIR ORIFICE BYPASS VLV
390 *	ROD DISCONNECT COIL SUPPRESSION DIODES
391	RWST TEMPORARY VENT
392	RECIRCULANT FIRE WATER FEED TO TURB BLDG
393	MODIFICATION OF CAT 1 BUILDING STRUCTS

394	RE-SUPPORT OF CAT I ELECT EQUIP - PART
395	RESUPPORT OF CAT I ELECT EQUIP PART II
396 *	DWST LEVEL INSTRUMENTATION
397	PAH AUX MAIN CONTROL BOARD
398	PIR & TEL DUCT FROM EOF TO PLANT
399	CY PERSONNEL ALERT SYSTEM
400 *	STATION BATTERY BLOWN FUSE INDICATION
401 *	SAFETY GRADE AUTO INITIATION AUX FW
402	REROUTE RHR CONTROL AIR LINE & SW LINE
403	REROUTE 2"AC-151-64 & 1.5"DRL-151-39
404	REMOVE SW LINE 1.5"HS-210-130,262
405	EOF CLOSED CKT-IV SYS
406	BUILDING MODIFICATION PROJECT
407 *	MOV 567 & 569 CNTRL SWITCH & LOGIC MOD
408 *	REPLACEMENT OF CABLES IN CONTAINMENT
409 *	AUX FW DISCHARGE ISOL VLV FW-MOV-160
410	AUX FW SUCTION VALVE BYPASS
411	RELOCATE CAT I FUEL OIL VLVS/OIL LINE
412 *	RHR MOV 701 & 803 POWER SUPPLY MODS
413 *	RADIOACTIVE EFFLUENT SYS MODIFICATION
414	CONDENSER RETUBING "B" WATERBOX
415	SG BLOWDOWN PIPING MODS (REV 1)
416	EMERGENCY DIESEL RELIABILITY MODS
417 *	DEGRADED VOLTAGE PROTECTION MODS
418 *	POWV AND BLOC VALVE LOGIC MOD TO 2/3
419	INSTALL FLOW METERS IN CONTROL AIR SYS
420	CYCLE II REFUELING
421 *	WIDE RANGE GAS MONITOR
422 *	INSTALL POST ACCIDENT SAMPLING SYSTEM
423 *	AUTO CLOSURE OF SG FW ISOLATION VALVES
424 *	REMOVE SI INTERLOCK ON CH-FCV-110,110A
425 *	DWST LEVEL TRANSMITTER
426	BLOG MOD CCU-1 POWER SOURCE
427	CHANGE VLVS SH-PV-230-1A,1B TO CAMFLEX
428	DESIGN SEISMIC ENCLOSURE-SWITCHGEAR DOOR
429	BATTERY CHARGER 1A POWER FEED
430	ALT BUS FEED TO NEW PBX ROOM
431	MOD TO EOF/TSC CAMERA SYSTEM
432	SI/RHR CHECK VALVES - MATERIAL CHANGE
433	WASTE LIQUID EVAP BOTTOMS PIPING
434	FIRE HYDRANT MODIFICATION
435	CONTAINMENT HATCHWAY SHIELD REMOVAL
436	UPGRADE OF SFB NORTH CRANE (CR-5-1A)
437	PRIMARY VENT HEADER MODIFICATION
438	SEISMIC MOD TO TURBINE & SERVICE BLDGS
439	STATION BATTERY 1B REMOVE 1 CELL
440	ADDITION OF CCIV CAMERA TO SECURITY SYS
441	RELOCATE CY HELIPORT LANDING LIGHTS
442 *	345KV SWITCHYARD FIRE DETECTION SYSTEM
443	FLOOD PROTECTION MODS
444 *	DIGITAL TURBINE SPEED INDICATION
445	ENLARGEMENT OF PROTECTED AREA
446	REROUTE 2.5" SLPH-121-40
447	REROUTE 3/4" SA-V-490,511
448	FUEL OIL TRANSFER SYSTEM CROSSCONNECT
449	

POCRNO	TITLE
450 *	MOD OF WHI SUBP LEVEL LOGIC
451	DRAIN ENLARGEMENT OFF OF PAD VENT SYS
452 *	DORIC ACID HEAT TRACE MODS
453	TURBINE BLDG SPRINKLER MODS (ISI-CHEM)
454	STATION "B" BAIT DANK INTERIM REPLACE
455	ROOF DRAIN RELOCATION
456	ULF OVERHD VHT COND VACUM DNR REPLCNHT
457	TURBINE LUBE OIL SYSTEM MOD
458	MOBILE SOLIDIFICATION SUPPORT SYSTEM
459	REEVALUATION OF SAFETY RELATED PIPING
460 *	HAC'S
461	HEW RX CAVITY POOL SEAL & HEUT SHIELD
462	ROOF DRAIN RELOCATION
463	REPLACE 2A & AB FW HEATER BUNDLES
464 *	VOLTAGE REGULATOR MOD & V/HZ P.T. CIRCU
465 *	OPC RELAY RELACEMENT
466	CONTAINMENT RADIO TRANSMISSION SYSTEM
467	STORAGE FOR DG BLDG FLOOD GATES
468	WASTE GAS OXYGEN ANALYZER
469 *	SILICA ANALYZER FOR WATER TREATMENT
470 *	LIGHTTORQUE MOTOR OPERATOR REPLACEMENT
471 *	REPLACEMENT OF STATION BATTERIES
472 *	STEAM LINE DRK X-MITTER TUNING REPLACE
473	SG PRIMARY MAINWAY DIAPHRAGM FASTENERS
474	SG BLOWDOWN THROTTLE VALVE
475	
476 *	REHEATER DRAIN TANK LEVEL CONTROLS MOD
477	TANK FARM SUBP LEVEL SWITCH MOD
478	PRIMARY VENT HEADER MOD
479 *	P-20 & P-71 HCO'S (APP J)
480	STATION KWH METERING MOD
481 *	OSCILLOGRAPH (PHASE I)
482	TEMPORARY POWER TO PAP
483	HP CALIBRATION FACILITY
484	RX VESSEL HEAD O-RING RETENTION CLIPS
485 *	MANIPULATOR CRANE MOD
486 *	TERRY TURBINE STEAM CONTROL VALVES
487 *	LOCAL FREQ & KWH METERS FOR EG 2A & B
488 *	DG VAR METER REPLACEMENT
489	VACUUM PRIMING PUMP CONTROL REPLACEMENT
490	SFP LINE VENT
491	BCRIC ACID FILTER DRAIN
492	D CHARGING PUMP RECIRC ORIFICE VALVE
493	RUST ANCHORAGE
494	CONDENSATE RECEIVER LEVEL CONTROL
495	COPE 12 REFUELING
496	STORAGE FOR "C" STATION BATTERY
497	HP CALIBRATION FACILITY
498	CONTAINMENT ENTRY MODULAR FACILITY
499 *	SFP COOLING SYSTEM MODS
500 *	4160 BUS 1-1A,1-1B AUTO/MANUAL TRANS
501	TURBINE GENERATOR LUBE OIL MODS (FP)
502	HELIUM LEAK DETECTOR TAP
503	CONTAINMENT JIB CRANE SEISMIC QUP'L
504	KWH METERING
505	SAFETY VALVE HS-SV-1216A (REPLACEMENT)

PCRNO	TITLE
506	FW 101 INIP RESTRAINT MOD
507	BA-CV-397 (REPLACEMENT)
508 *	RWST LEVEL ALARM ADDITION
509	HEAT TRACE CABINET POWER MOD
510	AUX STEAM FLOW INDICATOR
511 *	RTD TERMINAL BLOCKS IN OUTER AIRBULB
512	CONTAINMENT SERVICE AIR CHECK VALVES
513	BORIC ACID LINE RELOCATION
514	TROLLEY HOIST BEAM
515	INSTALL REFURBISHED LP TURBINE ROTOR
516	DWST & RWST HIGH LEVEL ALARMS RELOCATE
517	RWS CHANNEL 12 TUBING IN CONTAINMENT
518 *	OSCILLOGRAPH (PHASE 12)
519	REPLACE BORIC ACID FLOWMETER
520	INSTALL VENT VLV ON CCH RETUR. HEADER
521	HATH STEAM/LOW PT-HIGH PRESS STEAM TRP
522	PZR SAFETY VLV TAILPIPE MODIFICATION
523	CCH SLIP STREAM FILTER
524	WASTE TEST TANK BYPASS SWITCH MOD
525 *	AUX ELECTRICAL SYSTEM OSCILLOGRAPH
526	STEAM BLEED HUMIDIFIER
527	HP SAMPLE HOOD VENTILATION
528	PAB HEATING STEAM ISOLATION VALVE
529	RCP VIBRATION INSTRUMENTATION
530	
531	
532	RWST VENT AND OVERFLOW MODIFICATIONS
533	INSTALL SERVICE WATER CONTROL VALVES
534	WASTE NEUTRALIZATION TANK LEVEL MONITOR
535	HEAD TEMPERATURE INDICATION REPLACEMENT
536	SERVICE AIR TO WATER TREATMENT FLOW ING
537	RELOCATE CO2 FIRE SUPPRESSION SYST (PAB)
538	SERVICE WATER ENCLOSURE MOUNTING
539	CONTAINMENT AIR SUPPLY ALARM
540	DIESEL FIRE PUMP OIL TANK DIKE
541	REACH ROD TO CH-V-2060
542	EMERGENCY DIESELIST EXHAUST MOD
543	TURBINE OIL TRANSFER PUMP SUCTION MOD
544	TANK HEATING SYSTEM MODIFICATION
545	PORTABLE DEMINERALIZER HOSE CONNECTION
546	ADDITION OF RESTRAINTS TO THE DWST
547	
548	
549	WASTE GAS DISCHARGE LINE FLOWMETER
550	BORIC ACID LIFTING DEVICE
551	SAFETY CAGE FOR RWR PIT LADDER
552	INSTALL SECURITY MICROWAVE
553 *	SEMI-VITAL BUS TRANSFER SETPOINT
554	GENERATOR AUTO GROUND FAULT INDICATOR
555	
556	PURIFICATION PUMP VALVE
557	SEISMIC ALARM
558	TURBINE OIL STORAGE TANK COATING
559	SPENT FUEL RACK INSTALLATION
560	
561	

PCRNNO	TITLE
562	PASS CONTAINMENT ATM H2 PURGE VALVE
563	HEALTH PHYSICS OFFICE MODIFICATIONS
564	
565	
566	TURBINE FLANGE TEMPERATURE INDICATOR
567	PERM WELD ATT ON SAFETY RELATED PIPE
568	
569	REPLACE WATER TREAT CONDUCTIVITY CELLS
570	
571 *	RHR LOW-FLOW ALARM MODIFICATION
572	
573	GENERATOR POTENTIAL TRAN CONNECTION
574	CHARGING PUMP RECIRC ORIFICE BYPASS VLV
575	REMOVE OLD WASTE GAS SYSTEM PIPING
576	INSTALL EMER DIESEL MONITORING EQUIP
577 *	AUX FEEDWATER INITIATION CONTROL MOD
578	
579	NEW HYPOCHLORITE SYSTEM
580	NOV 252 CONTROL TRANSFORMER MOD
581	REPLACE MAIN STEAM TURBINE DRAIN VALVE
582	CONTROL AIR DRYER REPLACEMENT
583	
584	RESLEEVE THE CORE EXIT TO STACKUP
585	PRIMARY WATER SYSTEM MODIFICATIONS
586	AUXILIARY STEAM FLOWMETER ELECTRICAL
587	
588	
589	SPENT FUEL POOL BRIDGE MODIFICATION
590	CONTROL POINT OFFICE MODIFICATION
591	HP FACILITIES BUILDING OFFICE MODS
592	CHARGING PUMP MODIFICATIONS
593	CY SEP FLOOD PROTECTION MODIFICATIONS
594	WELL WATER TO CC & EXCITER COOLER
595	REMOVAL OF SA-PVC-534
596	SEP SKIMMER PUMP PRIMING CONNECTION
597 *	RHR VALVES INTERLOCK
598	EMER DIESEL AIR START COMPRESSOR
599	SECURITY DIESEL ALARM INDICATING LIGHT
600	
601 *	SG WIDE RANGE LEVEL INSTRUMENTATION
602	4A FEEDWATER HEATER REPLACEMENT
603	MOBILE SOLIDIFICATION INTERFACE MOD
604	WASTE GAS/H2-H2 SUPPLY
605	ADT FILTER VESSEL MODIFICATION
606	RX VESSEL HEAD INSULATION REPLACEMENT
607	
608	
609	CY 12R-REPLACE 345KV SWITCH
610	EOF DIESEL GENERATOR LOAD MODIFICATION
611	5A FW HEATER TUBE BUNDLE REPLACEMENT
612	CONTROL ROD DRIVE SHIELD LIFTING SLINGS
613 *	REPLACE PZR PRESS & LEVEL TRANSMITTERS
614	
615	

FOCPRD

TITLE

618	TRISODIUM PHOSPHATE BASKET INSTALLATION
619 *	1-1010 A & B TERMINAL BLOCK REMOVAL
620 *	OVERVOLTAGE RELAY REPLACEMENT
621	MSR CHEVRON RETROFIT
622 *	CORE COOLING USING PCRV'S (FEED/BLEED)
623	
624	
625	
626	REPLACE FOXBORO 6130H FM FLOW TRANS
627	WASTE HOLDUP TK-WASTE LTQ POLISH TX
628	A & B MSR TUBE BUNDLE REPLACEMENT
629	
630 *	LOOP STOP VLV TEMP INTERLOCK INDICATION
631	SLING RACK, TURBINE DECK
632	FERROGRAPHIC TUBE OIL SAMPLE POINTS
633	MAINTENANCE DRY PIPE SPRINKLERS
634 *	REPLACE FOXBORO PRESS TRANS PT#03 & 404
635	ISOLATION VALVE FOR PRESSURE SWITCH
636 *	EMER DIESEL GEN - ELECT TRIP & LOCKOUT
637	
638	TURBINE OIL RESERVOIR INLET LINE VALVE
639	HAIR CONDENSER DETUNING-C & D WATERBOX
640	ENLARGE 5H PUMP ACCESS AT EL. 0'0"
641	FOR PUMP VENT VALVE INSTALLATION
642 *	DOPIC ACID HEAT TRACE MODIFICATIONS
643	STARTUP FEEDWATER FILTRATION
644	CONTAINMENT CAVITY LEVEL INDICATION
645	SEISMIC MOOS - TURBINE BUILDING
646	REPLACE TIE BREAKERS- MCC'S 3, 4, & 8
647	HALLPOOM & FOX POOM AIR CONDITIONERS
648	
649	LP STEAM DRUMP VALVES FLANGE ADDITIONS
650	CY CHEMISTRY LAB UPGRADE
651	NUCLEAR RECORDS EXPANSION
652	5G PRIMARY INHIBIT COVER SHROUDED TENSIONER
653	VITAL INVERTER CABINET VENTILATION
654	CORE 13 REFUELING
655	PRESSURIZER SRV DISCHARGE PIPING MOOS
656	RX VESSEL HEAD GUIDE SHROUDED REPLACEMENT
657	CONDENSATE GLAND SEAL PUMP RECIRC LINE
658	GENERATOR HYDROGEN DRYER FLOW INDICATOR
659	TURBINE HALL SPRINKLER MODIFICATION
660	SFP HEAT EXCHANGER RELIEF VALVE
661	*C* CONTROL AIR COMP DISCHARGE ISO VLV
662	ISOPHASE BUS CORRECTOR MODIFICATION
663	FEEDWATER RECIRC PIPING SUPPORTS
664 *	FORV AND SV POSITION INDICATION
665	
666	
667 *	SAFETY INJECTION BLOCK CIRCUIT MOD
668	TURBINE HALL SPRINKLER REPORT MOO
669	HAIR 650 TRANSFORMER OIL FLOW INDICATION
670	WATER TREATMENT PIPING MODIFICATION
671	STORAGE OF SPARE CROS'S IN CONT SHRP
672	FUEL SEEP TANK MODIFICATION

PDCRHO	TITLE
674	BREATHING AIR STATION CHECKVALVES
675	3 & 4 IN HEATER AND AIR EJECTOR PIPING
676	
677	REPLACE PRESSURIZER HI LEVEL AF RELAY
678 A	REWIRING MOV'S 23, 24, AND 331
679	CONDENSER 'A' PRESSURE TAP SHIELD
680	
681	
682	SLUICE GATE SUPPORT PIN REMOVAL DEVICE
683	DRAIN PLUG FOR TRANSFER CANAL (REV 1)
684 *	REPLACEMENT OF RCS LOOP RID'S
685	
686	
687	WATER TREATMENT PIPING MODIFICATION
688	OIL STORAGE ROOM FIRE DAMPER
689	
690	
691	PZR SRV DISCHARGE PIPING SUPPORT MODS
692	
693	'B' CHARGING PUMP MOTOR REPLACEMENT
694	CY MICROWAVE SYSTEM

TABLE 2

TESTING RECOMMENDATIONS

PDCR 304 - Emergency Diesel Generator Alarm Modification

Recommendation: Test each alarm circuit from its source or actuating device.

PDCR 313 - CAR Fan Charcoal Filter High Temperature Detector

Recommendation: Test all charcoal temperature circuits from the thermocouple to the main control board.

PDCR 333 - Combustible Gas Detection System

Recommendation: Test to demonstrate that each alarm is in fact monitoring its designated area.

PDCR 340 - Containment Isolation Modification

Recommendation: Revise SUR 5.1-5 to clarify that testing must verify that the SI signal trips the HCP WL when the SI signal is present at the SI WL. SUR 5.1-5 as now written may not ensure that this circuit is verified in future surveillances.

PDCR 356 - Undervoltage Protection and Load Shedding

Recommendation: Perform diesel test with loss of AC, letting the diesel load and then initiating an I signal. Verify load shedding and resequencing of emergency loads.

PDCR 380 - RCP CCW and Seal Water Return Isolation

Recommendation: Verify that the seven valves that were removed from the isolation logic do not close on a containment isolation actuation signal.

PDCR 424 - Remove SI Interlock on CH-FCV-110.110A

Recommendation: Verify that these valves do not go open on an SI signal.

PDCR 601 - SG Wide Range Level Instrumentation Modification

Recommendation: Verify that SG trains A&B high level 69% override closes the feedwater regulating valves and activates high level alarm. Also, verify that 100% SG level blocks the closure of the feedwater regulating valves.