FLORIDA PUBLIC SERVICE COMMISSION
AUDIT DOCUMENT/RECORD REQUEST
NOTICE OF INTENT

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TO: Maritza Iacono

UTILITY: Progress Energy Florida — Carl Vinson, AUDIT MANAGER

FROM: Carl Vinson

REQUEST NUMBER: DR-5 DATE OF REQUEST: 5/28/08 - Due 6/09/08

AUDIT PURPOSE: Nuclear Controls Review

REQUEST THE FOLLOWING ITEM(S) BE PROVIDED BY: Maritza Iacono
REFERENCE RULE 25-22.006, F.A.C., THIS REQUEST IS MADE: ____ INCIDENT TO AN INQUIRY

__x__ OUTSIDE OF AN INQUIRY

ITEM DESCRIPTION:

1) a. To the extent not previously provided in a document request response, please provide copies of all Levy plant and CR3 Uprate bid evaluations and selection recommendations for all contracts of $1,000,000 or more that have been awarded to date.

b. Please provide copies of all written justifications for sole source selection of Levy plant and CR3 Uprate contractors for all contracts of $1,000,000 or more that have been awarded to date.

2) a. Please list and briefly describe any "lessons learned" from Progress Energy's North Carolina nuclear unit uprates that have been incorporated into the planning, design or implementation of the CR3 uprate.

b. Please indicate for each of Progress Energy's North Carolina nuclear unit uprates whether the project was completed on schedule and within budget.

c. Please provide the original cost estimate and the final completed cost for each of Progress Energy's North Carolina nuclear unit uprate projects. If applicable, provide a brief description of why completion costs exceeded the estimate(s).

3) Please describe in detail how the company is maintaining awareness of the status of the Westinghouse AP1000 unit under construction in China.

4) Please provide a copy of the March 28, 2008 Westinghouse/Shaw-Stone & Webster Letter of Intent and any transmittal correspondence.

COM ____
ECR ____
GCL ____
OPC ____
RCP 1
SSC ____
SGA ____
ADM ____
CLK ____

TO: AUDIT MANAGER Carl Vinson DATE: 6/6/08

THE REQUESTED RECORD OR DOCUMENTATION:

(1) ☒ HAS BEEN PROVIDED TODAY

(2) ☐ CANNOT BE PROVIDED BY THE REQUESTED DATE BUT WILL BE MADE AVAILABLE BY ____

(3) ☒ AND IN MY OPINION, ITEMS(S) 2a-c IS (ARE) PROPRIETARY AND CONFIDENTIAL BUSINESS INFORMATION AS DEFINED IN 364.183, 366.093, OR 367.156 F.S. TO MAINTAIN CONTINUED CONFIDENTIAL HANDLING OF THIS MATERIAL, THE UTILITY OR OTHER PERSON MUST, WITHIN 21 DAYS AFTER THE AUDIT EXIT CONFERENCE, FILE A REQUEST FOR CONFIDENTIAL CLASSIFICATION WITH THE DIVISION OF COMMISSION CLERK AND ADMINISTRATIVE SERVICES. REFER TO RULE 25-22.006, F.A.C.

(4) ☐ THE ITEM WILL NOT BE PROVIDED. (SEE ATTACHED MEMORANDUM)

SIGNATURE AND TITLE OF RESPONDENT Maritza M. Iacono
Supervisor - Regulatory Accounting

06616 JUL 29 08

FPSC-COMMISSION CLERK

Florida Public Service Commission
Audit Document/Record Request

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Item Description:

2) b. Question:
Please indicate for each of Progress Energy's North Carolina nuclear unit uprates whether the project was completed on schedule and within budget.

Response:
The original schedule and project approval dated March 2000 for Progress Energy's North Carolina Nuclear uprates at the Brunswick Plant's Units 1 and 2 had a completion date of 2005. The uprate project was complete in 2005. The final project cost was [redacted] million compared to final project approval of [redacted] million.

2) c. Question:
Please provide the original cost estimate and the final completed cost for each of Progress Energy's North Carolina nuclear unit uprate projects. If applicable, provide a brief description of why completion costs exceed the estimate(s).

Response:
March 2000 - project study funding approved that included an initial total cost estimate of [redacted] million.

August 2000 - revision was completed and approved based on refined fixed price details on various work scope to be performed, refinement of actual systems to be replaced along with project management and craft estimates for installation of major modifications for a revised total of [redacted] million from the [redacted] initial estimate.

May 2001 - total cost was revised from [redacted] million to [redacted] This increase was driven by the inclusion of the contractual incentives, which were not previously part of the total. These incentives were based on attaining actual generation gains. While the distribution of funds among subprojects was changed the total cost of all Extended Power Uprate projects, excluding incentives, did not increase.

Final completion costs were [redacted] million. This underrun is primarily related to the Unit 2 deferment of the MSR upgrade.

REDACTED

Florida Public Service Commission
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Item Description:

2) b. Question:
Please indicate for each of Progress Energy's North Carolina nuclear unit uprates whether the project was completed on schedule and within budget.

Response:
The Harris Nuclear Plant uprate completed at Progress Energy Carolina had a completion date of 2002.

2) c. Question:
Please provide the original cost estimate and the final completed cost for each of Progress Energy's North Carolina nuclear unit uprate projects. If applicable, provide a brief description of why completion costs exceed the estimate(s).

Response:
The original estimate in 1996 was [redacted] million. The authorized amount in 2001 was [redacted] million. We do not have a cost at completion for the following reasons:

1. Westinghouse was split apart and sold. This changed the contract strategy and caused additional vendors to get involved in the project.
2. There were many calculation changes that were identified during the detailed design phase which lead to significant emerging work which lead to additional plant modifications.

REDACTED

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
Alara / Modifications				
1 Alara / Modifications Item# 15495 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1005 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: E&RC / Extended Power Uprat O&S Rep: Responsible: Due: NCR:	none_noted Long,Robert G	ALARA work Plan #2618 "MS-FW Vibration Monitoring Mod in the Drywell and MSIV Pit" for the B114R1 outage had an original dose estimate of 2.475 Rem for the project. As project work started in the drywell on elevations 17', 38' and 52', it became evident the dose estimate was too small. The project dose was re-estimated using actual dose rates experienced by personnel working on the project. ALARA plan #2618 was presented to the ALARA committee and revised to a dose estimate of 5.974 Rem. As the project continued the dose was carefully tracked and reported by the outage team. The final dose for the projet turned out to be 5.507 Rem (92% of revised estimate).	There was a small increase in scope in the drywell for insulation boxes on the main steam and feedwater piping, however the revised manhour estimate for the ALARA plan was very close to the original estimate. The variance between the original and revised dose estimate was determined to be the effective dose rate used on the estimate. The original dose estimate used an effective dose rate of 7 mR, which was typical for the location of penetration 1-X-104E where electrical terminations were made. Actual dose rates in the drywell where the project was being installed were 17 mR. With the large number of manhours in the drywell, the dose estimate increased proportionally. The recommendation is to use an effective dose rate of about 17 mR when preparing the ALARA plan for the upcoming U2 project.	This has been incorporated in the E&RC survey results for future use.
Good Practice / Coordination				
2 Good Practice / Coordination Item# 15125 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: Sys Outage Date: 1/3/2002 Date Added: 1/3/2002 Organization: Extended Power Uprate / Exte O&S Rep: Responsible: Due: NCR:	none_noted Kitchen,Robert H	A very close working relationship was established with NRR to ensure that reviews of the EPU license submittals proceeded smoothly. BNP management and EPU personnel briefed NRR at the start of the project and shortly after the EPU license submittal to ensure a clear understanding of the license submittal and implementation plans. In addition, a weekly teleconference was held with the NRR Project Manager to ensure a common understanding of open issues and who had responsibility for resolution. A goal of 3 week turnaround to respond to NRR Requests for Additional Information (RAI) was established. The aggressive response was well received by NRR and further improved the working relationship.	Use a similar approach for other significant licensing efforts. Ken Wilson	Close
Good Practice / Human Performance				
3 Good Practice / Human Perform Item# 14621 Outage ON-LINE Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 6205 Outage Date: 6/12/2000 Date Added: 6/12/2000 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted	Use of the incorrect bulb in the Local Alarm and Trouble light indicators can cause serious damage to the Local Panel.the manufactors part no is CM8-3395. The Deluge Valve systems that use this type of bulb in the local panel are identified in procedures 1PT-34.14.3.1 and 2PT-34.14.3.2.	Logged for information	Logged for information

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition

Good Practice / Modifications

4 Good Practice / Modifications Kitchen,Robert H

Item# 15255 Outage B114R1

Reviewed: Yes Closed: Yes Plt: BNP U#: Sys 9015

Outage Date: 3/21/2002 Date Added: 3/21/2002

Organization: E&RC / Extended Power Uprat O&S Rep:

Responsible: Due: NCR:

EPU and HP personnel worked together to establish a quick connect telemetry connection that should be useful for drywell entries. See discussion below.

ESR 01-00033 (EC # 46361) "Main Steam / Feedwater Piping Vibration Monitoring" project has installed vibration monitoring cables in the drywell that pass through penetration 1-X-104E and terminate at a junction box located in the Reactor Building on elevation 20 foot, near the CRD hatch. Penetration 1-X-104E is located at elevation 42 ft, azimuth 220 degrees in the drywell. We have designed, and installed, a spare cable that the project is has been using for headset communications between the drywell and reactor building. This cable is labeled SPARE in the junction box, and can be used by ALARA for telemetry when not in use by the EPUR project personnel. This spare cable will have a standard B/C connector located in the reactor building junction box. In the drywell, we have installed a standard B/C connector on this cable, so that the HPs can easily attach the telemetry equipment. The communications cable is coiled-up and secured at penetration 1-X-104E.

A constraint is that ESR 01-00033 is a TEMPORARY MOD, which by procedure EGR-NGGC-0005 must be removed at the completion of the project (in outage B116R1). I anticipate a different, new ESR will be needed (by others) to accept this communications cable long term.

Evaluate similar installation for Unit 2. Assess the value in making this a permanent change.

Being used for B114M1

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition

Good Practice / Practices

5 Good Practice / Practices none_noted

Item# 15044 Outage ON-LINE Stacy,Mark G

Reviewed: Yes Closed: No Plt: BNP U#: Sys 1050

Outage Date: 6/8/2001 Date Added: 6/8/2001

Organization: Extended Power Uprate / NIT O&S Rep:

Responsible: Due: NCR:

While working on the Plant Process Computer Interface to the PRNM NUMAC system on the development system, a problem was discovered with the RBM chassis design where the Fiber optics connect to the GEDAC card. The barrel connectors used to attach the FO cable to the RBM may force the GEDAC card up if tightened to much, because the barrel connector can rub against the body of the Chassis. In the development system this card was not seated lightly and over tightening of the FO connector pushed up the GEDAC IO board enough to cause communication errors.

Ensure that Installers of the production system are aware of the sensitivity of these boards. Review degree that the Fiber Optic connectors need to be screwed on and the seating of the GEDAC IO board.

Actual plant equipment is configured to prevent the GEDAC card from becomimg unseated during installation.

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6 Good Practice / Practices Wall,Hal Dean

Item# 24703 Outage B115R1 Wall,Hal Dean

Reviewed: Yes Closed: Yes Plt: BNP U#: Sys 0000

Outage Date: 3/12/2004 Date Added: 3/12/2004

Organization: Maintenance - Projects / Exten O&S Rep: Glenn Long

Responsible: Thomas Moore Due: 10/12/20 NCR:

Observation Date: 3/10/2004
CONTAINMENT DEVICE
Observation: The site may need to consider the use of temporary containment dikes under mobile equipment.
Details: The use of temporary containment dikes under mobile equipment (air compressors, large cranes, etc) could prevent the release of oils or fuels migrating to the storm drains in the event of a spill whether it is from refueling the equipment or failure of the equipment.

Evaluate implementing this practice. It is currently in practice at Harris Plant.

We currently stock and routinely use the oil pigs under rental equipment. The air compressor that is staged in the Rx bldg has a catch basin in the frame. During refuel activities (for fuel burning equipment) the fuel truck is equipped with material to contain such a spill, so this item can be closed.

Robin

Planning / Communication

7 Planning / Communication none_noted

Item# 14589 Outage B113R1 Kitchen,Robert H

Reviewed: Yes Closed: Yes Plt: BNP U#: Sys 7045

Outage Date: 4/19/2000 Date Added: 4/19/2000

Organization: Extended Power Uprate O&S Rep:

Responsible: Due: NCR:

As a project organization, EPU did not routinely attend the site morning coordination meeting. This prevents EPU personnel from keeping abreast of unit activities/issues. In addition, when an work order or AR is reviewed that is related to EPU there is no one present to address questions.

In the future, EPU representative should periodically attend this meeting and begin attending the site coordination meeting (0730) daily when pre-outage work starts.

void

Terry H.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition

Planning / Coordination

8 Planning / Coordination Dubrouillet,Paul E

Item# 15379 Outage B114R1 Long,Robert G

Reviewed: Yes Closed: Yes Plt: BNP U#: 0 Sys 3050

Outage Date: 3/2/2002 Date Added: 4/29/2002

Organization: Outage & Scheduling / Extend O&S Rep:

Responsible: Due: NCR:

RFP demand test could be better coordinated with the RFP overspeed test.

Can we perform 1(2)SP-01-117 section 9.2.1, RFP Demand Test, In conjunction with rolling up the turbine in prep for the Overspeed Test in 0CM-TRB5217 If this is possible this will save us some time.

2. If the above is not possible, steps need to be added to 1(2)SP-01-117 section 9.2.1 to secure the RFP following step f. One concern expressed by Maintenance is that tripping the RFP secures oil to the rotating pilot assembly. With the RFP uncoupled, the turbine coast down takes much longer than normal and damage may occur to this assembly. Consider adding the following method for securing the RFP. This is how I did it.

9.2.1
1.f. Increase RFPT demand by depressing the increase pushbutton. Increase demand slowly in 10% increments to 100% demand.

2. Secure the RFPT as follows.
a. Slowly lower the MGU to the low speed stop.
b. Lower the MSC to the low speed stop.
c. When RFPT speed has stopped decreasing, trip the RFPT. (Mitch Stacy)

Relates to power ascension sequence. Power ascension procedure 2SP-02-201 will be worked in parallel with the TRB-521 overspeed test and the Woodward governor test. The schedule will reflect the 3 in parallel and the activities will be coordinated by the field test engineer. Guidance provided by John Reinsburrow. Close.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition

Planning / Development

9 Planning / Development none_noted

Item# 15212 Outage B114R1 Bostic,Steven Carey

Reviewed: Yes Closed: Yes Plt: BNP U#: Sys 6180

Outage Date: 3/15/2002 Date Added: 3/15/2002

Organization: Extended Power Uprate O&S Rep:

Responsible: Due: NCR:

RFP Room fire detection removal (and clearance development)

The RFP room heat and smoke detectors (and related conduit) should be removed from the ceiling over the RFPs when rigging beams are to be installed or other significant ceiling level work is to be done. This has been a lesson learned from past outages also. Both of these detectors in the 1A RFP room were broken during this outage as the result of ceiling level work. Also, the clearance for the smoke detectors (1 in each RFP room) should be developed such that it only disables the two RFP room smoke detectors and the one in the Condensate Booster Pump room, versus disabling all of Zone 2 which leaves the entire breezeway unprotected.

The EPU planning for the U/2 RFPT outage will include task actions for overhead interference removal including the fire detectors mentioned in this LL. The damage to both detector devises occuring during the U/1 outage resulted late in the outage from contact with workers' hardhats. Removing the detectors early in the outage will lower the risk and opportunity to damage the devices while a high volume of traffic exists in the overhead on scaffolding. EPU project management will meet with fire protection engineering and the I&C/Electrical representative that will plan and execute the interference removal work to reach agreement on how to best develop the clearances for the fire zones. SCB 6-4-02. Discussion with lead clearance writer resulted in agreement that when the RFPT clearance writer has been named/assigned, the meeting to achieve designing the safest RFPT fire protection clearances, requiring the least amount of lost detection for the breezeway and adjacent areas will occur, incorporating the application of an "end-of-line" resistor as part of the detector clearance will enable use of the upstream detectors instead of loosing the entire detector line. Installation and removal instructions for the resistor(s) supporting this clearance activity will need to be included in the I&C/Elect. support task that removes the detectors initially. Consider this item resolved. SCB 6-13-02.

Planning / ESRs

10 Planning / ESRs Dubroullet,Paul E

Item# 15380 Outage B114R1

Reviewed: Yes Closed: Yes Plt: BNP U#: 0 Sys 5005

Outage Date: 3/2/2002 Date Added: 4/29/2002

Organization: Extended Power Uprate O&S Rep:

Responsible: Due: NCR:

During Main Turbine Testing iaw 0PT-40.2.8, 1A HDP tripped without an annunciator (due to unit trip load shed) when the turbine tripped on overspeed. HDD was recircing for cleanup. This was a valid trip but was unexpected. PAR submitted.

Other turbine tests should be evaluated for the same impact. Mitch Stacy.

Tuebine test and their impacts will be discussed during the next round of system schedule meetings

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
Planning / Implementation				

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
11 Planning / Implementation Item# 25595 Outage 8115R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3050 Outage Date: 6/10/2004 Date Added: 6/10/2004 Organization: Extended Power Uprate O&S Rep: Responsible: Steve Bostic Due: 6/10/200 NCR:	Bostic,Steven Carey Bostic,Steven Carey	Problem: Casing rings The two U/1 RFP end heads and four seal housings were sent to Flowserve's contaminated machine shop in Memphis as part of the modification plan to have the new diffusers mated to the end heads and new seal housing bushings installed. Once inspected, three of the seal housings had erosion in between the seal housing bore and the old bushing fits. This non-conforming condition was documented in Flowserve's standard NCR format and we were formally notified of the condition and the recommended corrective action requirements. We agreed with the bushing repairs and authorized the corrective machining to start immediately in an effort to minimize further schedule delay. Upon inspection of the 1A RFP end head, the intermediate gasket landing was found to have two gaskets installed "back-to-back" and the resulting washout and erosion in the landing shoulder surface. Another Flowserve NCR was submitted to us and a repair that incorporated a single, thicker gasket and resurfacing the landing was agreed to. Additionally, the original Memphis machining plan was based upon the tooling and machining equipment being capable of accommodating any of our seal housings, including the attached piping that extended from the housings in several directions and in differing degrees from housing to housing. Despite the many related conversations occurring, dimensional measurements being exchanged and photos of the seal housings being provided, once the seal housings were inspected in Memphis, it became necessary to cut some of the piping off to facilitate mounting in the machining equipment to allow the machining process to start. This activity required additional weld planning for the project and further increased the machining duration in Memphis. The additional time that the end heads and seal housings stayed in Memphis as a result of the erosion repairs and piping removal was approximately three outage days, though the three day delay did not adversely impact to RFP's return to service, the additional costs to Flowserve were $45,000 and required additional days of contract labor to complete the project work. In an effort to ensure that the new casing wear rings received the proper dimensional layout to fit the existing mounting holes in the pump casings, the existing casing wear rings were shipped to Memphis with the end heads (which	Resolution: In U/2, we will receive the casing and end head rings from the Flowserve facility in Charlotte and upon return receipt of the end heads from Memphis, we will transfer punch the wear rings' bolt patterns onto the end heads and casing walls where new mounting holes will be drilled and tapped. We need to stage the proper size drill bits and have the proper sized transfer punch on hand.	Resolution: In U/2, we will receive the casing and end head rings from the Flowserve facility in Charlotte and upon return receipt of the end heads from Memphis, we will transfer punch the wear rings' bolt patterns onto the end heads and casing walls where new mounting holes will be drilled and tapped. We need to stage the proper size drill bits and have the proper sized transfer punch on hand.

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
		had their own wear rings installed) and seal housings. The onsite Flowserve tech reps communicated with parties at Flowserve to ensure that proper casing wear rings bolt hole patterns were achieved using the old rings as templates. Upon receipt of the new casing rings, the bolt hole patterns were found to be precisely drilled in 120 degree increments as though they were indexed instead of transferred from the existing ring pattern. On the inboard casing ring, where the new, indexed casing ring bolt hole pattern closely aligned with the holes in the existing casing, the new casing ring's OD bore was found to be out of tolerance (ring's OD fit too large in diameter) with Flowserve's requirements. The casing ring was placed into one of the BNP shop lathes and machined to reduce the OD to within tolerance, but the force applied to the ring while in the lathe chuck deformed the ring resulting in an unusable, irregular curvature upon completion of the machining. This ring had to be replaced with a new inboard casing ring from BNP stock. In the outboard casing ring installation effort, the ID was of the supplied new ring was found to be out of Flowserve's tolerance and was excluded from use. A second new casing wear ring was drawn from BNP stock to install in this effort. In both casing ring installations where the new from stock rings were used, the casing fits were drilled and tapped to align with the indexed bolt holes in the new rings. Both of the Flowserve tech reps were involved with the casing ring dimensional checks and recovery actions where new BNP casing rings were used in place of the Flowserve supplied casing rings.		
12 Planning / Implementation *Item# 25596 Outage B115R1* Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3050 Outage Date: 6/10/2004 Date Added: 6/10/2004 Organization: Extended Power Uprate O&S Rep: Responsible: Steve Bostic Due: 6/10/200 NCR:	Bostic,Steven Carey *Bostic,Steven Carey*	Problem: Seal housing piping Discussions with Flowserve in Memphis regarding their capability to machine the four gland seal housings with our piping attached resulted in exchanging some photos and dimensional sketches and ultimately, determining that the gland seal housings could be shipped with the piping installed and no welding would be required to reinstall. After arriving at Memphis, we were notified that the piping attached to each seal housing would have to be cut and re-welded, as the Memphis shop machines could not accommodate the piping configurations, once actually fitted into the machines.	Resolution: In U/2, all seal housing piping will be cut and removed prior to packaging for shipment to Memphis. Welding instructions for the piping's reinstallation will be generated during the pre-outage planning effort window. Piping will be welded back into the seal housings as a planned event instead of an emergent action. This will need to be included into the welding scope as a planned activity in pursuit of a welding contract.	Resolution: In U/2, all seal housing piping will be cut and removed prior to packaging for shipment to Memphis. Welding instructions for the piping's reinstallation will be generated during the pre-outage planning effort window. Piping will be welded back into the seal housings as a planned event instead of an emergent action. This will need to be included into the welding scope as a planned activity in pursuit of a welding contract.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
13 Planning / Implementation Item# 25597 Outage B115R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3050 Outage Date: 6/10/2004 Date Added: 6/10/2004 Organization: Extended Power Uprate O&S Rep: Responsible: Steve Bostic Due: 6/10/200 NCR:	Bostic,Steven Carey Bostic,Steven Carey	Problem: Seal housing erosion repairs The seal housing bushing fits in three of four seal housings exhibited erosion or historical "over-machining" that was found by Flowserve during disassembly and inspection in Memphis. This resulted in three Flowserve NCRs and subsequent repair plans. The additional scope was treated as an emergent scope increase and resulted in a cost of over $45k.	Resolution: Discussions toward reaching an agreement with Flowserve regarding how to incorporate potential emergent scope (as a contingency) into the existing PO for the planned scope and some reasonable amount of unknown scope machining in Memphis have taken place. The effort to pre-plan the potential for erosion or other historical repair machining into the PO will reduce the emergent cost impact to some degree.	Resolution: Discussions toward reaching an agreement with Flowserve regarding how to incorporate potential emergent scope (as a contingency) into the existing PO for the planned scope and some reasonable amount of unknown scope machining in Memphis have taken place. The effort to pre-plan the potential for erosion or other historical repair machining into the PO will reduce the emergent cost impact to some degree.
14 Planning / Implementation Item# 25598 Outage B115R1 Reviewed: Yes Closed: Yes Plt: BNP U# 1 Sys 3050 Outage Date: 6/10/2004 Date Added: 6/10/2004 Organization: Extended Power Uprate O&S Rep: Responsible: Steve Bostic Due: 6/10/200 NCR:	Bostic,Steven Carey Bostic,Steven Carey	Problem: Hy-Torc wrench head availability We struggled to get enough (2 or 3) properly sized Hy-Torc wrench heads during the late pre-outage readiness period. Though several wrench heads were staged for our work, all but one was either too small or too large initially. We started with the available size 10 head on the 1A RFP, but failed to get the size 5 or size 25 to cooperate on 1A RFP.	Resolution: After some searching and trading, we located two size 10s on the turbine deck where we were able to obtain one for our use on the 1B RFP. For the U/2 outage, we should pre-stage two size 10 Hy-Torc wrench heads that have been pre-calibrated up to 10,000 ft/lbs (for final reassembly torquing) through our Cal Shop.	Resolution: After some searching and trading, we located two size 10s on the turbine deck where we were able to obtain one for our use on the 1B RFP. For the U/2 outage, we should pre-stage two size 10 Hy-Torc wrench heads that have been pre-calibrated up to 10,000 ft/lbs (for final reassembly torquing) through our Cal Shop.
15 Planning / Implementation Item# 25600 Outage B115R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3070 Outage Date: 6/10/2004 Date Added: 6/10/2004 Organization: Extended Power Uprate O&S Rep: Responsible: Steve Bostic Due: 6/10/200 NCR:	Bostic,Steven Carey Bostic,Steven Carey	Problem: 4160 volt cable delivery angle and support position Each of the three 4160 volt power supply cables were long enough to make proper connection to the motor leads. However, in each case and to varying degrees, the approach angles, support placements and wooden guides required relocating to allow for a smooth arc of the cable as it left the cable trays and attached to the motors. This was emergent and was not a planned activity. The impact was small and did not require any engineering documentation, but did require additional scaffolding and corrective action labor.	Resolution: In U/2, the cable supports and wooden guide will be relocated in a planned manner that support the cable through a smooth arc from the cable trays into the motor connection boxes. This will likely require additional structural steel or the relocation of existing structural steel and the final elevation of the wooden guide blocks.	Resolution: In U/2, the cable supports and wooden guide will be relocated in a planned manner that support the cable through a smooth arc from the cable trays into the motor connection boxes. This will likely require additional structural steel or the relocation of existing structural steel and the final elevation of the wooden guide blocks.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
16 Planning / Implementation Item# 15373 Outage B114R1 Reviewed: Yes Closed: Yes Outage Date: 3/2/2002 Organization: Extended Power Uprate Responsible:	none_noted Bostic,Steven Carey Plt: BNP U#: 0 Sys 3050 Date Added: 4/29/2002 O&S Rep: Due: NCR:	Matting on top of grating in RFP rooms trapped heat under grating. This caused working conditions to be extremely hot and dark. Mitch Stacy.	Evaluate further use of the matting based on the input above.	Where it is true that placing the black rubber matting on the grating in the RFPT rooms likely prohibits air circulation and substantially diminishes available light under the grating, the benefits gained in safety and worker efficiency over the entire scope of the project (in which 99% of the manhours, work is performed above the grating) are too great to stop the practice of applying some type of barrier (sheet metal, plywood, aluminum decking, rubber matting, etc.). The large number of chain devices used in this project would constantly become hung in the grating were it not for the barrier matting. Numerous small hardware parts, fragments of debris, rust scale, insulation particles, ty-raps, etc. accumulate above the grating on the barrier allowing for routine clean-up and removal. This prevents a large volume of the debris from falling through the grating which requires a greater effort to maintain room cleanliness. The practice of applying some type of floor covering to prevent large scale cleanliness accumulation below the grating and prevent frequent struggling with hoist chain becoming lodged in the grating slots will be continued for the next U/2 RFPT turbine outage and the next U/1 & U/2 RFPT pump outages. Consider this item resolved. SCB 6-4-02
17 Planning / Implementation Item# 25599 Outage B115R1 Reviewed: Yes Closed: Yes Outage Date: 6/10/2004 Organization: Extended Power Uprate Responsible: Steve Bostic	Bostic,Steven Carey Plt: BNP U#: 1 Sys 3070 Date Added: 6/10/2004 O&S Rep: Due: 6/10/200 NCR:	Problem: Vertical interferences Two vertical travel interferences were experienced while removing and replacing the U/2 condensate pumps & motors. One of the interferences, a vacuum duct from the local sample station, was pre-identified and determined to be more of a nuisance, but that it would not prevent pump or motor travel. The other interference, a structural steel support for the suspension of the 4160 volt feed to the 1A motor was not identified until we were in the outage. This oversight required a scaffold modification and removal of the support extension.	Resolution: In U/2, the vacuum duct is much more centrally located over the motor and will require removal, temporary re-routing to maintain the sample station function and eventually reinstalling. All 4160 volt power supply supports will be considered for interference and included into the planning for removal and reinstallation.	Resolution: In U/2, the vacuum duct is much more centrally located over the motor and will require removal, temporary re-routing to maintain the sample station function and eventually reinstalling. All 4160 volt power supply supports will be considered for interference and included into the planning for removal and reinstallation.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
Planning / Materials				
18 Planning / Materials Item# 15118 Outage B114R1 Bostic,Steven Carey Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3050 Outage Date: 10/24/2001 Date Added: 10/24/2001 Organization: Extended Power Uprate / Exte O&S Rep: Responsible: Due: NCR:		Initial design engineering from GE indicated the new RFPT rotors' thermal growth to be .123" in extension. During subsequent evaluation and review of the GE supplied engineering data, our EPU design engineer determined that the RFPT rotors actually grew towards the pumps, thus resulting in a reversal of dimensional growth from what had been communicated to our coupling vendor related to designing new couplings required for the installation of new RFPT rotors., We were able to communicate the dimensional change to the coupling vendor in time such that no delivery delays or cost impacts for re-engineering occurred. Lesson-learned: Relying upon stated, verbally communicated data, even when well discussed and challenged, is potentially never as reliable as reviewing the final text, drawings and engineering data in it's completed form. There is inherent risk associated when working out of process and when using preliminary data to design downstream components with. Fortunately, the critical "good catch" was made and the communications timing resulted in no adverse impact to the project's development.	Recognize how using preliminary data can present risks when preforming downstream design actions based upon data that has not had onsite or secondary, independent validation, verification or confirmation. Items associated with this type of treatment must be tracked as "higher than normal risks" until verification can be performed. Ted Williams	All four couplings were ordered in 2002 using the final engineering data provided by GE. No further engineering will be required to install the final two couplings into U/2. U/1 couplings fit properly and maintained the proper thermal positioning. U/2's will be no different. Consider this item resolved.
19 Planning / Materials Item# 24691 Outage B115R1 Leitch,Bruce J Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys RVXX Outage Date: 3/8/2004 Date Added: 3/8/2004 Organization: Extended Power Uprate O&S Rep: Responsible: Rich Delong Due: 10/12/20 NCR:		Steam dryer modification weld rod.	GE started work on the steam dryer with 3/32" weld rod. After a welding on the 270 cover plate they realized they could use 1/8" weld rod. This allows welding to be completed more efficiently. Ensure GE considers this prior to working on unit 2 so we start with the weld rod that will ensure we complete the job ALARA.	The contractor shall ensure they utilize the appropriate size weld rod for each component to be welded based upon the scope of work to be performed.
Planning / Outage Teams				
20 Planning / Outage Teams none_noted Item# 15545 Outage B114M1 West,Dawn G Reviewed: Yes Closed: Yes Plt: BNP U#: Sys Outage Date: 9/24/2002 Date Added: 9/24/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:		When an OCA creates a "group page" during the outage it can only be accessed using that individuals personal ID and password. A "group page" needs to be established at the start of each outage and located in an area of the e-mail system that is accessible to personnel working in the "War Room".		This has been evaluated and can be done by the Mail Drop available through IT.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
Planning / Planning				
21 Planning / Planning Item# 24602 Outage B115R1 Reviewed: Yes Closed: Yes Outage Date: 3/4/2004 Organization: Extended Power Uprate Responsible: Rich Delong	Leitch,Bruce J Leitch,Bruce J Plt: BNP U#: 1 Sys RVXX Date Added: 3/4/2004 O&S Rep: Due: 10/12/20 NCR:	Steam Dryer modification preparations.	Move the A-frame to/from the fuel floor with the legs removed (It was difficult to move up with the legs on). Also, ensure the hanging shielding is hung prior to flood-up, although it can be hung after flood-up, it is less of a contamination concern when the equipment pit is empty. Have tri-nucs wired, hoses attached, and filters installed prior to flood-up. Install a PA in the 117' dive area. Have two phone numbers available in the dive area, if two phone numbers are not available, have two phones, one away from the dive station. Modify I-beam and A-frame to add rigging points (three on A-frame two on I beam). Reserve red duct tape for deonner use. Consider limiting FMEA to the water, logging all the items used in the larger FMEA was difficult, caused confusion, and did not add value. Ensure contractors know not to tie items off to handrails since they need to be taken out to move the AWP.	The disposition of this lessons learned is as follows: 1. The movement of the A-frame to and from the refuel floor will be performed to ensure ease of movement. 2. The hanging shielding will be hung, to the extent possible, prior to flood up. 3. The tri-nucs shall be powered and ready for service prior to flood-up. 4. The appropriate communications will be established on the refuel floor in support of the project. The I-beam and A-frame will be modified, as appropriate, to provide additional rigging points. 5. Red duct tape will be reserved for use by decon personnel. 6. The FMEA requirements will be addressed in the FME Plan for the project. 7. Personnel will be instructed on not securing items to the handrails.
Planning / Procedures				
22 Planning / Procedures Item# 15119 Outage B114R1 Reviewed: Yes Closed: Yes Outage Date: 10/26/2001 Organization: Extended Power Uprate Responsible:	none_noted Bostic,Steven Carey Plt: BNP U#: 0 Sys Date Added: 10/26/2001 O&S Rep: Due: NCR:	Reactor Feed Pump Coupling Information was received after coupling was ordered due to the tight schedule for issuing the ESRs for approval after receiving information from the vendor. This resulted in phone calls to correct the information given to the coupling vendor. Subsequent phone calls to over communicate the changed technical information revealed additional mistakes in the information given.	Reinforce the need to obtain formal written communication to backup any oral information that transmits design information. Process will require design review/verification and information given orally can be checked for accuracy prior to transmitting.	All four couplings were ordered and arrived in 2002. Two were installed in U/1 RFPTs and the two remaining couplings were placed into stock. These two remaining couplings will be issued to the U/2 W/Os in 2003 and installed in the 2003 spring outage. Consider this item resolved. SCB 6-3-02
Planning / Scheduling				
23 Planning / Scheduling Item# 24721 Outage B115R1 Reviewed: Yes Closed: Yes Outage Date: 3/16/2004 Organization: Extended Power Uprate Responsible: Rich Delong	Leitch,Bruce J Leitch,Bruce J Plt: BNP U#: 1 Sys RVXX Date Added: 3/16/2004 O&S Rep: Due: 10/12/20 NCR:	Steam dryer post job vacuum window.	After initial vacuum window it was determined that further vacuuming of the dryer was required. Schedule this activity to be 24 to 30 hours and maintain two shifts coverage until vacuuming is complete. Also, include an activity for FME barrier removal following completion of vacuum window. Finally, consider using two tri-nuc 260 units instead of a 260 and a 600 unit. The two 260s with a vacuum hose may be more effective.	The initial vacuum window has been scheduled for 24 hours and coverage will be maintained to support the schedule. An activity has been included in the schedule for FME barrier removal following completion of vacuum activities. The appropriate tri-nuc filters will be utilized for the project.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
Planning / Tools/Equipment				
24 Planning / Tools/Equipment Item# 15366 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3050 Outage Date: 4/29/2002 Date Added: 4/29/2002 Organization: Extended Power Uprate / Main O&S Rep: Responsible: Due: NCR:	Gourlay,Rita Bostic,Steven Carey	Verify that a request has been submitted for temporary service to be piped into U/2 turbine crane laydown bay work area. The use of air tooling will greatly enhance the work to be performed on RFPT components in the area. We should also investigate the purchase of a 220 volt air compressor to be installed in the U/2 laydown bay to avoid the cost associated with routing a long temporary air trunk to the work area.		It is currently believed that a significant length of 2" air line would be required to install temporary air in the U/2 laydown bay. It appears more economical to purchase (or rent) a 60 or 80 gallon, 220 volt, 2-stage air compressor and place it in the laydown bay to *best support the RFPT work during the 2003, U/2* outage. More investigation is required. SCB 6-3-02. In recent discussions with Larry Barnhill, it was decided that running a 1" hose from the heater bay area, through the penetrations into the U/2 turbine crane laydown bay will be both cost effective and meet the demands for air tool operation anticipated for the rotor and diaphragm repair effort. Consider this item closed. CWO # 02-164 generated for B216R1 outage
Resources / Contract Administration				
25 Resources / Contract Administra Item# 24689 Outage B115R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys RVXX Outage Date: 3/8/2004 Date Added: 3/8/2004 Organization: Extended Power Uprate O&S Rep: Responsible: Rich Delong Due: 10/12/20 NCR:	Leitch,Bruce J Leitch,Bruce J	Steam dryer contractor resources.	Ensure staffing expectations for the project are included in contract development. Need to address the need to have enough personnel to avoid the need for completing AP-001 forms for overtime. Need to address having enough divers to complete tie bar work in parellel with cover plate work, this was planned this outage, however, UCC did not have enough divers on site to support, impacted schedule by 24 hours. Need to address arrival dates of individuals and allow adequate time for inprocesssing.	The contract for the steam dryer modification will include the detailed scope of work and schedule. The contractor will staff the project to complete the scope of work based upon the mutually agreed upon schedule. The work will be performed in accordance with the requirements of 0AP-001.
Resources / Personnel				
25 Resources / Personnel Item# 24722 Outage B115R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys RVXX Outage Date: 3/16/2004 Date Added: 3/16/2004 Organization: Extended Power Uprate / E&R O&S Rep: Responsible: Rich Delong Due: 10/12/20 NCR:	Leitch,Bruce J Leitch,Bruce J	Steam dryer demobilization	Ensure RP resources are dedicated to the dryer project through demobilization. These resources need to be part of the daily team turnover meetings.	RP resources will be utilized through the demobilization of the project and will be a part of the daily turnover meetings.
27 Resources / Personnel Item# 25351 Outage B115R1 Reviewed: Yes Closed: Yes Plt: BNP U#: Sys 0000 Outage Date: 4/28/2004 Date Added: 4/28/2004 Organization: Extended Power Uprate / Main O&S Rep: Responsible: Due: 4/28/200 NCR:	*Williams,Miller J* Williams,Miller J	*TEI (or said vendor) needs to have two* individuals (one for each MSR area) assigned to the TEI crew for non-radiological HEPA/ventilation checks, cooling needs, and as an O2 meter gofer. An extensive amount of time was expended by the HP staff supporting these Non radiological requests.	*need to have two individuals dedicated (one for* each MSR area) for non-radiological HEPA/ventilation checks, cooling needs, and as an O2 meter gofer.	We no longer use this vendor.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
Resources / Scheduling				
28 Resources / Scheduling Item# 15370 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3050 Outage Date: 4/29/2002 Date Added: 4/29/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	Gourlay,Rita Bostic,Steven Carey	Many of the GE service shop personnel required extensions in order to meet the demands of their planned work and our emergent scope. Work with GE to calculate welding/machining (Service Shop) staffing requirements so overtime authorization form AP-1 (excess of 72 hours in 7-day period) does not have to be applied for the GE Service Shop staff.		Discussions with GE regarding how to properly staff for the above-scope welding and machining are ongoing. Other vendors that can supply nuclear grade welding and field machining have been contacted to provide this service to EPU. Planning meeting held with GE on 6-21-02 indicated that GE plans to significantly strengthen their service shop field management and personnel control by staffing a hands-off manager to focus on the service shop's in-scope and above scope responsibilities. Staffing of in-scope U/2 RFPTservice shop work will be similar to that of 2002 in U/1, but will have the advantage of another level of GE management presence and a reporting alignment to the field engineers stationed on the HP and RFPT modification projects. With the better planned, more clearly defined work list or scope we have for the U/2 outage, GE can support the schedule with greater efficiency and less likelihood of requiring the greater-than-72 hour exemptions for welders and machinists. Consider this item closed.
Resources / Tools/Equipment				
29 Resources / Tools/Equipment Item# 15511 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3055 Outage Date: 3/3/2002 Date Added: 5/20/2002 Organization: Maintenance - I&C / Extended O&S Rep: Responsible: Due: NCR:	Tripp,Bud R West,Dawn G	Ineffective PM of Welding Machines PMs were performed prior to the B114R1 outage on the 10 welding machines to be utilized for the 5A & 5B feedwater heater replacement project for the B114R1 outage. During the B114R1 outage, 6 out of 10 (i.e. 60%) of these machines became inoperable. The short term solution was to expedite procurement of six new welding machines in order to not impact the work.	It is recommended that I&C/Electrical Maintenance and the BESS welding engineer be responsible to evaluate the PM procedure and the overall material condition of the existing welding machines on site to determine what corrective action, if any, is required to correct this problem prior to future outages.	Welding Machine PM (146051-01) has been scheduled for week 48. This should restore all welders to the necessary material condition. Failures of [illegible] welding machines will be managed as they occ during the outage. Electrical Outage Coordinator will brief the crew with importance of action.
Resources / Tools/Processes				
30 Resources / Tools/Processes Item# 15512 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3055 Outage Date: 3/3/2002 Date Added: 5/20/2002 Organization: Extended Power Uprate / Mate O&S Rep: Responsible: Due: NCR:	Tripp,Bud R West,Dawn G	Inefficient Welding Material Issue During the welding activities associated with the 5A & 5B feedwater heater replacement project numerous delays were encountered by the welders receiving and returning welding materials to the welding material issue counter located outside the RCA. These delays were largely attributed to the challenges associated with having to get rod caddies and welding materials frisked out of the RCA in order to take it to the welding material issue counter that was located outside the RCA.	It is recommended that M&CS and the BESS welding engineer be responsible to implement a plan to issue welding materials from inside the RCA during outages. The options should include the ability to issue welding materials from the RCA side of Stores and/or to set-up an issue point inside the Turbine Building area where the majority of the welding is taking place.	Reference

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
Schedule / Clearance				
31 Schedule / Clearance Item# 15505 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: Sys 5170 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Operations / Extended Power O&S Rep: Responsible: Due: NCR:	none_noted Dunsmore,Curtis S	*New clearance had to be generated during the* B114R1 outage to allow the Generator Unit Load shed mod to be implemented on the U1 TB Chiller 4.1 kv breaker without securing the TB supply fans. The work scope was assigned *to the master TB chiller clearance which* would have taken the TB ventilation out of service during the wrong time of the outage.	Generator a separate stand alone clearance for work associated with the 4 kv chiller motor breaker.	Information will be added to clearance lessons learned for TBHVAC.
Schedule / Coordination				
32 Schedule / Coordination Item# 15798 Outage B216R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 2 Sys Outage Date: 4/20/2003 Date Added: 4/20/2003 Organization: Extended Power Uprate O&S Rep: Responsible: Reinsburrow Due: 3/20/200 NCR:	Bryant,J. Darrell	The specifics of the Unit 2 Intermediate Extended Power Uprate Startup Test Plan procedure, 2SP-02-0200, were not always evident to the operating crew or the Outage Center personnel during the startup and power ascension from B216R1. As such, power ascension was not as expeditious as it could have been. On one occasion, a data sheet required at a certain power level took about 3 hours to complete, primarily because the operating crew was not familiar with the items it contained and their locations. Additionally several significant plant alterations were required at different power levels (ie, Condensate/Condensate Booster Pump swaps) and the operating crew was not made aware of these requirements until the target power level was reached. This process did not lend itself well to performing 'look-aheads' and pre-assigning personnel for support.	Since power uprate testing is an infrequently performed procedure not familiar to the operating crew, one suggestion would be to include the specifics of this test plan in the operator training program along with other outage-related training. This would at least expose the operating crew to some of the test requirements prior to implementation. Another suggestion would be to continue the use of Project SRO's through power ascension to provide a another liaison between the Power Uprate group and Operations. The Project SRO's could focus on the test plan and could provide the 'look-ahead' and coordination of operator support and pre-job briefing required for the testing.	Overview of power ascension testing following the B115R1 outage will be provided to the power ascension Operations and testing crews and the Outage Operations Coordinator with specific information regarding: (1) sequence of testing and the organizations responsble for the testing (including contact persons). (2) specific plant configurations required to support the testing (3) data collection information (frequency for taking data, associated power levels, and location of the indications being used to monitor the selected paramenters) associated with the power ascension and the groups responsible for collecting the data, and expected response of the components being monitored/testing being performed.
33 Schedule / Coordination Item# 15254 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: Sys 5065 Outage Date: 3/20/2002 Date Added: 3/20/2002 Organization: Outage & Scheduling / Extend O&S Rep: Responsible: Due: NCR:	none_noted	The UAT could not be reenergized for backfeed until meggar readings were improved through the operation of the Isophase Cooling Fans and heater. This was difficult since work was still in progress on the upgrade project and unplanned jumper installations and clearance manipulations were needed	Schedule the Cooling Upgrade to complete prior to the restoration of the UAT for Backfeed or plan to make a fan and heater available for bus drying 24 hours in advance of the UAT restoration.	The scheduling of the Cooling Upgrade will be discussed with the Project Managers and the UAT System Engineer.
34 Schedule / Coordination Item# 24723 Outage B115R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys RVXX Outage Date: 3/16/2004 Date Added: 3/16/2004 Organization: Extended Power Uprate / Outa O&S Rep: Responsible: Kenny Scott Due: 10/12/20 NCR:	Leitch,Bruce J Leitch,Bruce J	Steam dryer FME curtain removal	Ensure the activity to remove the FME barrier is scheduled to occur with ventilation secured to minimze the potential for airborne contamination.	An activity has been added to the schedule for the removal of the FME barrier with reactor building ventilation secured.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
Schedule / Scheduling				
35 Schedule / Scheduling Item# 15504 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: Sys 5065 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted	Isophase Bus Duct ESR -01-000030 had to receive unplanned resources added during the B114R1 outage to complete the mod ahead of schedule to allow entry into UAT backfeed.	Schedule Isophase Bus Duct logic modifications early in the outage to allow running of the Isophase fans and heaters if the UAT megger readings are found low prior to E-Buss outages.	Additional Mod work orders written and scheduled t allow non-UAT work to start early in outage. Disposition completed. 10/10/02 F.King
36 Schedule / Scheduling Item# 15014 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3077 Outage Date: 2/24/2001 Date Added: 5/16/2001 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	Dubrouillet,Paul E Raines,Charles W	Many PMT's were not yet scheduled when the outage was half over.	Scheduling of PMT's should be included in the preliminary level 3 schedule.	This will be done this outage.
Schedule / Tools/Equipment				
37 Schedule / Tools/Equipment Item# 15367 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys Outage Date: 4/29/2002 Date Added: 4/29/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	Gourlay,Rita Bostic,Steven Carey	Grinding fixture was a machining alternative to a boring bar restoration, but was late being built and delivered causing some field delay impact. Ensure the GE-made grinding fixture/tool (for 6th stage diaphragm seal face restoration) stored at the Charlotte Service Shop is scheduled to arrive prior to the outage start date.		These fixtures belong to GE. Arrangements have been made with GE (Dave Roberts and Jeff Lane) to store the two seal face grinding fixtures in the (Charlotte, NC) Service Shop Facility until requested for next outage. It is currently believed that the fixtures will not be needed for the upcoming U/2 outage due to (current) planning associated with the use/application of a boring bar to achieve adequate seal face surface finishes. Consider this item resolved. SCB 6-3-02.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
Sub-Category Not Assigned				
38 Sub-Category Not Assigned Item# 15426 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/1/2002 Date Added: 5/1/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	Dunsmore,Curtis S Stacy,Mark G	When performing PRN change out on P603, utilize clear plastic sheets to cover RTGB so ops can see through it. (ops LL book)	Add instructions to work order.	Instructions have been added to work order 212225 task 04 "Ensure clear plastic is utilized to cover the control board to allow operations personnel to monitor plant conditions while cutting is in progress".
39 Sub-Category Not Assigned Item# 14197 Outage B113R1 Reviewed: Yes Closed: Yes Plt: BNP U#: Sys Outage Date: 2/29/2000 Date Added: 2/29/2000 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Kitchen,Robert H	Early planning estimates for the EPU project missed some significant items on some projects. For example, the cost of Radwaste disposal was not always included and Regulatory review fees were frequently not included. To address this and to enable reviewers to understand what is included in the estimate a checklist was developed for project estimating.	The checklist has been incorporated into NGG-ADM-0103	void

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
40 Sub-Category Not Assigned Item# 15246 Outage B114R1 Reviewed: Yes Closed: Yes Outage Date: 3/20/2002 Organization: Responsible:	none_noted Kirk,John R Plt: BNP U#: Sys Date Added: 3/20/2002 Extended Power Uprate / Main O&S Rep: Due: NCR:	A worker on the FW heater project had a hand injury while conducting grinding operations. The following item should be reviewed immediately prior to the next feedwater heater project to ensure that comprehensive actions are implemented to ensure safety. Grinder Safety March 19, 2002 As part of the ongoing investigation into the CES employee grinder related injury on 03/18/02 at about 0206 hours, these enhancements to portable grinder use have been developed to prevent a recurrence of the injury. These enhancements will be implemented where appropriate on the Feed Water Heater replacement project and reviewed for applicability on other jobs involving grinding. Summary: Two Carolina Energy System workers were grinding in close proximity to one another. To re-direct the grinding debris from his co-worker to his right, an employee adjusted the position of his grinder guard in a manner that directed the debris away from the coworker. In doing so, the employee adjusting the grinder guard inadvertently exposed his hand being used on the grinder T-Bar (extension handle) to possible contact with the grinding disc. During the grinding process, the grinding disc came into contact with something that made the grinder "kick-back", and this kick-back resulted in the grinder disc coming into contact with the worker's finger, resulting in a laceration to the user's left index finger. All employees were wearing the prescribed personal protective equipment in the prescribed manner (leather work gloves, face and eye protection, and head protection). About the guard: OSHA requires a guard on grinders that use abrasive grinding wheels 2 inches in diameter or greater. The guard (that is required to cover 180° of the grinding disc) serves three basic purposes: it directs the flow path of debris away from the user, it protects the user from fragmentation should the disc fail, and it provides protection for the exposed hand on the extension handle or "T-Bar". The guard is adjustable to allow a worker to direct the debris path in the most desirable direction. The guard is designed to be adjusted. Lessons Learned: The following are actions	Immediate actions that have been implemented to prevent recurrence or are in the implementation phase: q□All station hand held grinders were inspected today (3/19) on day shift to ensure that guards were in place and properly attached. q□Employees on the Feed Water Heater replacement project, while performing grinding operations, will wear heavy-duty leather welding type gloves to provide maximum protection for the hands. Site consideration of welders' work gloves, or other protective gloves, as a general rule, will follow. q□All grinding operations will be reviewed by the appropriate supervisor(s) to ensure that shielding or separation is in place to protect other employees without the necessity of repositioning a grinder guard wherever possible. q□Work leads will discuss with all employees involved in portable grinding operations the "trade-knowledge" of positioning a grinder disc guard in such a manner as to provide protection to the exposed hand on an extension bar or "T-Bar", and that in some cases the "T-Bar" may need to be moved to the other side of the grinder to afford maximum hand protection to the individual using the grinder. Again, some workers may find this uncomfortable, as it then requires use of the left hand to operate the control switch. We reiterate that this is "trade knowledge", and not required by OSHA or station regulations or procedures. (This recommendation is at the discretion of the worker.)	The proper use of grindes will be part of the daily pre-job briefs

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
		that can prevent this injury from recurring: q□ To the extent possible, separate workers so that one worker is not in the debris path of another worker, eliminating the need to redirect the path of debris. q□ Where workers are in close proximity to one another, use shields or curtains to keep grinding debris from flowing from one work location to another. (A physical barrier is an option when workers cannot be separated due to other restraints.) q□ "Skill-of-the-trade" knowledge teaches us to relocate the position of the "T-Bar" when we relocate the position of the guard. If the "T-Bar" is on the left of the grinder, position the guard so that it protects the hand on the "T-Bar". If the guard is covering the right 180° of the grinding disc, position the 'T-Bar' on the right side of the grinder. Some workers may find this uncomfortable, as it then requires use of the left hand to operate the control switch. When the guard is protecting the bottom 180° of the disc, the hand is protected in either T-Bar position. This recommendation is at the discretion of the worker. q□ Provide a heavier quality work glove for the employees involved in grinding operations. In the incident related above, the employee was wearing standard issue leather work gloves. Common industry practice is to wear heavy leather welding gloves when grinding, and in some cases per the injured employee, metal gloves such as those used by the meat cutting industry. The use of welders' work gloves will be implemented on a trial basis on the Feed Water Heater Replacement project. Site consideration of welders' work gloves, or other protective gloves, as a general rule, will follow.		
41 Sub-Category Not Assigned Item# 15124 Outage B114R1 Reviewed: Yes Closed: Yes Outage Date: 1/3/2002 Organization: Extended Power Uprate Responsible:	none_noted Kitchen,Robert H Plt: BNP U#: Sys Date Added: 1/3/2002 O&S Rep: Due: NCR:	EPU implementation requires several updates to the core model used in the simulator. The development of each Initial Condition (IC) costs approximately $38,000. It was determined that computer software could be purchased that enabled direct download of fuel performance projections into the simulator core model. The software could be purchased at a cost of $190,000 but results in a lower cost for implementation and enables Training to perform core updates without contractor assistance or at a MUCH lower cost.	The software is being purchased for implementation at BNP. Consider use of this software at other nuclear sites.	Close

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
42 Sub-Category Not Assigned Item# 15123 Outage B114R1 Reviewed: Yes Closed: Yes Outage Date: 1/3/2002 Organization: Extended Power Uprate / Site Responsible:	none_noted Kitchen,Robert H Plt: BNP U#: Sys Date Added: 1/3/2002 O&S Rep: Due: NCR:	The site supported a monthly EPU project update to PRG. The site PRG was separated into one monthly meeting for routine projects and a separate monthly PRG meeting for EPU. Cost tracking and budget for EPU was maintained separate from plant items. A risk matrix was developed to support EPU project management. The risk matrix combines the PRG Candidate List and identified project risks into one report. This enables a clear report of project implementation and financial risk to be provided to management on a routine basis.	Maintain a similar approach for EPU and other large projects at plant sites.	Close
43 Sub-Category Not Assigned Item# 15122 Outage B114R1 Reviewed: Yes Closed: Yes Outage Date: 1/3/2002 Organization: Extended Power Uprate / Main Responsible:	none_noted Kitchen,Robert H Plt: BNP U#: Sys Date Added: 1/3/2002 O&S Rep: Due: NCR:	Detailed financial reports were developed to support tracking of EPU projects. In addition to financial system reports an access database was used to maintain a living plan for each project. The database is used to maintain an accurate estimate of individual and total EPU project costs. The database is validated by EPU management and then uploaded to the PRG checkbook prior to the monthly PRG meeting for EPU. This tool was also used to provide budget information and to support periodic financial evaluations of EPU project value.	Continue use of this tool for project management	Close
44 Sub-Category Not Assigned Item# 15121 Outage B114R1 Reviewed: Yes Closed: Yes Outage Date: 1/3/2002 Organization: Extended Power Uprate / Main Responsible:	none_noted Kitchen,Robert H Plt: BNP U#: Sys Date Added: 1/3/2002 O&S Rep: Due: NCR:	To assist project managers and units impacted by projects a report was developed that linked and displayed work orders, procedure changes and ESRs that are required to implement the project. This provides a good tool to identify impacts and also a feedback mechanism for the Project Manager to ensure that required support is identified.	Continue this practice with other projects	Close
45 Sub-Category Not Assigned Item# 15226 Outage B114R1 Reviewed: Yes Closed: Yes Outage Date: 3/17/2002 Organization: Extended Power Uprate Responsible:	Eason Sr.,Terry W Eason Sr.,Terry W Plt: BNP U#: Sys Date Added: 10/10/2002 O&S Rep: Due: NCR:	Some schedule logic errors were noted with the RFPT and FW Heater projects. Items were noted that linked an activity to another even though there was not a linkage. This resulted in the need to break links to allow schedulers to properly determine project status relative to schedule.	Review RFPT and FW Heater project schedules and eliminate unnecessary links between activities. It is necessary to show sequence but this can effectively be done by delayed starts tied to a predecessor. For example, RFPT disassembly is a predecessor for many repair activities. However, the sequence of repairs is not critical provided that the repair completion meets the reassembly need.	The RFPT and FW heater replacement project managers are working closely with O&S scheduler Roy Kuhns to evaluate and understand the logic of both project schedules in order to ensure the appropriateschedule logic lies are made.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
Training / Clearance				
46 Training / Clearance Item# 15618 Outage B216R1 Reviewed: Yes Closed: Yes Plt: BNP U#: Sys Outage Date: 3/8/2003 Date Added: 3/8/2003 Organization: Extended Power Uprate O&S Rep: Responsible: Rich DeLong Due: NCR:	Kitchen,Robert H Kitchen,Robert H	One PGN employee did not have access to Passport Clearance since PQD records were not entered until the day the outage started. Individual had completed clearance training two weeks prior to the outage.	1) EPU personnel should verify access to required Passport modules prior to the outage. 2) Training should ensure critical entries such as clearance qualification records are entered prior to outage start.	Passport Access has been verified for all appropriate EPU Personnel. An Additional check will be done on Shared Resources once participants have been confirmed.
Training / Tools/Equipment				
47 Training / Tools/Equipment Item# 24724 Outage B115R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys RVXX Outage Date: 3/16/2004 Date Added: 3/16/2004 Organization: Extended Power Uprate O&S Rep: Responsible: Rich Delong Due: 10/12/20 NCR: 120494	Leitch,Bruce J Leitch,Bruce J	Steam dryer contractor training / familiarization.	In order to reduce the need for rigging support ensure the contractors have been briefed on AWP operation and have any qualifications required to operate the A-frame hoist.	Project personnel will be given the appropriate training and/or instruction on the operation of the Auxiliary Work Platform, A-frame hoist, and miscellaneous rigging activities.
Work Management / Communication				
48 Work Management / Communic Item# 15224 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: Sys Outage Date: 3/17/2002 Date Added: 3/17/2002 Organization: Outage & Scheduling / Extend O&S Rep: Responsible: Due: NCR:	none_noted West,Dawn G	Deficiencies were found with rigging practices, hot work control, confined space permits and eye protection.	Consider including a brief review of problems observed and what to look for on observations during outage management team training the week prior to the outage. This may help to identify problems earlier and reduce the number. Project managers should also review these items in more detail with the work force.	Reference for outage team training
Work Management / Coordination				
49 Work Management / Coordinatio Item# 14212 Outage B113R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys Outage Date: 7/14/1999 Date Added: 3/10/2000 Organization: Extended Power Uprate / Oper O&S Rep: Responsible: Due: NCR:		THE UNIT 1 RB AO an d Trainee were briefed on draining the RWCU BWRT to RW. the 1-G16-F418 valve was opened to suport the transfer, then closed the valve following the transfer. After a survey was conducted a second flush was ordered, the F418 was again opened for the flush. Radiation levels decreased to normal, however the AO did not complete procedural requirements to restore the line up per the operating procedure. Three days later on 7/14/99 it was determined that some area radiation areas exceeded 100mr/hr.	Remind personnel that particular attention to the restoration is an important factor in every evolution no matter how insignificant or familiar you are with the job. In this case the AO did not use the required continuous use procedure as a part of the work, nor get the required independent verification as required by the procedure.	This was reviewed with the involved operator and each Shift Superintendent has reviewed this event with their crews and reinforced expectations relative to procedural adherence, level of use requirements and requirements for partial performance of procedures.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition

Work Management / ESRs

50 Work Management / ESRs none_noted

Item# 15498 Outage B114R1 Stacy,Mark G

Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050

Outage Date: 5/7/2002 Date Added: 5/7/2002

Organization: Extended Power Uprate O&S Rep:

Responsible: Due: NCR:

Have wire labels available that will not come off.

New label maker and labels have been procured.

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51 Work Management / ESRs none_noted

Item# 15474 Outage B114R1 Stacy,Mark G

Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050

Outage Date: 5/7/2002 Date Added: 5/7/2002

Organization: Extended Power Uprate O&S Rep:

Responsible: Due: NCR:

Practice installing Sil-tempt prior to the outage.

Sil-temp sleeving will be installed on numerous cables pre-outage and all craft associated with PRNM project will be participating in this evolution.

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52 Work Management / ESRs none_noted

Item# 15475 Outage B114R1 Stacy,Mark G

Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050

Outage Date: 5/7/2002 Date Added: 5/7/2002

Organization: Extended Power Uprate O&S Rep:

Responsible: Due: NCR:

Put Sil-tempt as close to the wire lug as possible.

EC guidance has been revised to be more specific as to installation of Sil-Temp sleeving.

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53 Work Management / ESRs none_noted

Item# 15476 Outage B114R1 Stacy,Mark G

Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050

Outage Date: 5/7/2002 Date Added: 5/7/2002

Organization: Extended Power Uprate O&S Rep:

Responsible: Due: NCR:

Do more Sil-tempt prior to the outage.

Sil-temp sleeving will be installed on numerous cables pre-outage and all craft associated with PRNM project will be participating in this evolution.

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54 Work Management / ESRs none_noted

Item# 15477 Outage B114R1 Stacy,Mark G

Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050

Outage Date: 5/7/2002 Date Added: 5/7/2002

Organization: Extended Power Uprate O&S Rep:

Responsible: Due: NCR:

When installing fiber optic cables pay special attention to the cable labels for the from and to designation.

Caution statement has been added to the wiring installation section of EC 46730.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
55 Work Management / ESRs Item# 15478 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Ensure RPS cable/jumber divisions are maintained when cables are sil-tempted.		Preoutage cable fabrication and sil temp installation sections have been revised to show these as separate applications.
56 Work Management / ESRs Item# 15501 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Make it clear to the site that even though RPS jumpers are installed, a loss of power to the K12 relays will cause a ½ scram.		Work order instructions have been added to ensure operations is aware that this condition exists.
57 Work Management / ESRs Item# 15473 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Use heavy duty setting on the stainless steel tie wrap gun.		This item is skill of the craft and is dependant upon the size of the cable that the Sil-temp sleeving is to be used on.
58 Work Management / ESRs Item# 15499 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted West,Dawn G	Get banana jacks with ring lugs.		reference
59 Work Management / ESRs Item# 15470 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Include butt splices in C91-P607, P608 and P609 in the EC.		Duplicate of lesson learned item 15469.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
60 Work Management / ESRs Item# 15497 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted West,Dawn G	Validate the shared resources and contractors have the appropriate qualifications for the work assigned. (NIT for examples – Dave Guseman)		Reference
61 Work Management / ESRs Item# 15496 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Get controlled documents and technical manuals issued earlier.		Techmanuals are issued anda control documents to be issued in a timely manner.
62 Work Management / ESRs Item# 15500 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Have a loop diagram for the recorder wiring (See Luis Jimenez's hand sketch)		Sketch has been added to EC 46730.
63 Work Management / ESRs Item# 15464 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Remember to include equipment identification tagging changes for RPS cabinets in the Unit 2 modification. These were identified as needed during the Unit 1 outage to address terminology changes from APRMs (A to F) to Voters (1 to 4) X and Y relays.		Included in Attachment J of EC 46730. Labels to be prefabricated and inspected in October 2002.
64 Work Management / ESRs Item# 15480 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted West,Dawn G	Set APRM to auto-load a GAFT of 0.995 (see Bryan Wester for explanation)		Reference

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
65 Work Management / ESRs Item# 15481 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted West,Dawn G	Have temporary PPC terminal available for unit 2 and make permanent.		reference
66 Work Management / ESRs Item# 15483 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Delete 25% OPRM testing from the unit 2 EC.		Testing is still required to be performed to esatablish a baseline for the data to be compiled. There will be no acceptance criteria for the 25% OPRM test.
67 Work Management / ESRs Item# 15484 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Perform a more detailed pre-outage inventory of the new PRNM equipment.		To be performed upon receipt of equipment from GE.
68 Work Management / ESRs Item# 15503 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Long,Robert G	void		viod
69 Work Management / ESRs Item# 15472 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Identify and purchase special tools.		Special tools for PRNM project have been purchased and maintained from the Unit 1 installation.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
70 Work Management / ESRs Item# 15463 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Ensure that the components removed from the P-608 bays are temporarily stored in an adequate organized fashion following their initial removal. Mike William's office was used as a temporary Q-list staging area to temporarily store the equipment removed from P-608. Many components were stacked upon one another (and with other "debris" on top in some cases) in a fashion that you would not expect to see for components that may be returned to stock (for use on Unit 2), or sold as Q-list equipment. The room appeared "stuffed" and did not reflect good storage conditions. These components were subsequently un-stacked and transferred to the staging area at the back of Unit 1's back-panel (in a room that previously contained ½ of the new APRMs). In this location, the components were adequately organized and protected from damage.		Cleanliness and materials storage to be discussed with craft personnel upon arrival on site to emphasize importance of Q-list storage and staging areas.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
71 Work Management / ESRs Item# 15445 Outage B114R1 Reviewed: Yes Closed: Yes Outage Date: 5/7/2002 Organization: Extended Power Uprate Responsible:	none_noted West,Dawn G Plt: BNP U#: 1 Sys 1050 Date Added: 5/7/2002 O&S Rep: Due: NCR:	Need to provide more specific and deliberate controls to manage live cables at P-603 from OPERABLE SRM/IRM channels during the digital recorder replacement modification, and to control the restoration sequence of OPERABLE SRM/IRM channels to the new digital recorders (i.e. make the last field termination at P-603). The U1 Power Uprate mod blended these activities with APRM recorder replacement activities, without providing the needed warnings/controls that the SRM/IRM recorders were fed live voltage from OPERABLE and REQUIRED SRM and IRM channels. It was noted on one shift that the two (electrical taped) terminal lugs from one channel had been touched together at P-603 resulting in an adverse affect on the associated OPERABLE channel. It was fortuitous that the fuel shuffle sequence had already been completed when these terminal lugs were disturbed. By mixing these cables in ESR removal steps with cables from the de-energized APRM cabinets, it de-emphasized the importance of controlling these SRM/IRM cables at P-603. The final restoration ESR instructions for field wiring to the SRM/IRM channels would have also allowed all 4 SRM channels and 8 IRM Channels to be re-connected concurrently without deliberate steps to check each for continued proper operation of the associated OPERABLE SRM or IRM channel as they were restored. Since this final termination at P-603 in effect checks the new field wiring between the SRM/IRM chassis and the new digital recorders, post mod testing must be performed as the channels are sequentially restored. Otherwise, you have a condition where these 12 channels have been in effect, modified electrically, with no confirmation of continued OPERABLE performance. As a matter of note, one channel (IRM E) was identified to be in-operable during the restoration process since its internal test oscillator could not adequately generate a 40 and 125-test signal.		Given the EPUR to include in planning

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
72 Work Management / ESRs Item# 15465 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Include in Unit 2's modification a step to have an additional independent verification of wiring of the P-608 bays after all wiring is complete. Engineers on Unit 1 used a clean set of the latest revision 6 wiring diagrams actually identified several problems that required resolution prior to equipment being energized.		This is a good work practice followed by I&C craft personnel and Engineering. Sign offs are provided in the panel close out section of EC 46730.
73 Work Management / ESRs Item# 15467 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Structure level 3 installation schedule task by work type, such as internal wiring, hardware, equipment instead of organizing the work by equipment bay.		Level schedule has been revised to include work by work task type where applicable.
74 Work Management / ESRs Item# 15468 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Train technicians how to use the sliding links in the PPC termination cabinets.		Computer support personnel to train individuals upon arrival on site.
75 Work Management / ESRs Item# 15469 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Reserve cable and butt splices for the C91-P607, P608 & P609 work.		All materials reserved and allocated to work order 212223 task 05.
76 Work Management / ESRs Item# 15492 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Ensure procedures exist for testing the PRNM equipment when the plant is shutdown.		0MST-RBM21NA & 22NA are to be issued for testing RBM's while shutdown. APRM procedure will work with the plant shutdown in their current configuration.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
77 Work Management / ESRs Item# 15471 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted West,Dawn G	Modify and test the TIPSCAN software before the outage.		reference
78 Work Management / ESRs Item# 15462 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Disconnect P608 internal wiring before cutting any cables or wires and tape each wire as it is cut.		General caution statement has benn added to EC 46730 removal section to provide guidance for removal of wiring in panels 2-H12-P608 and 2-H12-P603.
79 Work Management / ESRs Item# 15460 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Long,Robert G	Provide specific instructions on how to spare the large cables coming from P-603 Full Core Display. Cutting off the amphenol, marking as spare, and then taping the end, initially spared these cables. They were subsequently shortened significantly (which was appropriate), remarked as spare, and re-taped. The ESR should provide more specific instructions to avoid this re-work on Unit 2.		duplicate. Rgl
80 Work Management / ESRs Item# 15455 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	SilTemp ESR installation directions need to be clarified for Unit 2. SilTemp re-work occurred on at least 3 shifts during the P-608 installation phase due to not interpreting the ESR's general instructions correctly when SilTemp sleeving was first installed. In addition, SilTemp sleeving had to be corrected on several pre-fabricated wiring bundles during the installation phase, slowing down progress. Based on the re-work experienced with SilTemp, we should confirm that the flex conduit directions (that lays in the wire tray and protects RPS power and/or logic) are also very specific to avoid re-work.		Instructions have been added to EC 46730 to enhance Sil-temp installation requirements.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
81 Work Management / ESRs Item# 15453 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	The jumper, internal to the connector, for the IRM light module needs to be left in place.		A caution statement has been added to EC 46730 section H.1.7.20 to ensure connector and jumpers are maintained.
82 Work Management / ESRs Item# 15452 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Miss the mode switch mounting screws when developing the mounting details for the ODAs.		Dimensions on installation sketches have been changed to ensure the mode switch mounting screws are missed.
83 Work Management / ESRs Item# 15451 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Review the sparing method for the cables in the top of the cabinet for the LPRM lights.		It is the skill of the craft to determine at what length these large cables are to be spared and secured so as to not interfere with operating plant equipment. EC 46730 section H.1.7.2 has a specific table listing which cables are to be spared.
84 Work Management / ESRs Item# 15450 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Ensure the ESR gives specific instructions for the sparing of large cables going to the full core display. The mod did not specifically state to cut off the large amphenol connectors and tape the cable ends, so the I&C technicians had to get additional guidance from the responsible engineer on how to handle these spared cables. To eliminate clutter in the back of P-603 from these spared cables, they do need to have the connectors removed so they can be tucked down low in the enclosure.		It is the skill of the craft to determine at what length these large cables are to be spared and secured so as to not interfere with operating plant equipment. EC 46730 section H.1.7.2 has a specific table listing which cables are to be spared.
85 Work Management / ESRs Item# 15449 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Ensure mod switch wiring re-assignments are handled at P-608 versus within the termination enclosure at P-603. During the implementation, it was discovered that the P-603 termination enclosure for the mode switch had interior barriers that prevented planned wiring re-locations. This was resolved by making the mode switch affected wiring changes within P-608 wiring.		Instructions have been incorporated into Unit 2 EC 46730 sections H.1.5.2.5 and H.1.5.4.3 to perform mode switch wiring changes in 2-H12-P608.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
86 Work Management / ESRs Item# 15447 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Check all pre-fabricated equipment identification tags prior to the outage start. Several of the pre-fabricated RTGB equipment identification tags for the digital recorders and RBM/APRM ODAs were incorrect and had to be re-made during the outage. This comment also applies to the P-608 tags, where several of these tags were also incorrect. These tags should be fabricated and checked prior to the outage start.		Tags to be made and checked in October 2002.
87 Work Management / ESRs Item# 15446 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Need to improve the ESR installation steps associated with filler panels on the RTGB. As a matter of note every single filler plate that was pre-fabricated to install on the RTGB (to fill holes from removed equipment), had to be modified one ore more times to successfully complete their installation. These machining/drilling modifications were difficult to get completed during the outage because of higher priority work in progress in the Maintenance machine shop. This work was required due to a combination of incorrect original fabrication, interferences from stitch welds on RTGB vertical panel stiffeners, or the holes were not quite the dimensions expected. Also, these panels were delivered "rusty" and not suitable for bonding by the filler material and had to be sandblasted prior to be used.	It is recommended that the backing plates be fabricated 1st and compared closely with as-built conditions on the vertical panel of the RTGB. Be sure to look for the stitch weld interferences on Unit 2, and modify the backing plates accordingly. The filler plates should be fabricated, but not attached to the backing plates until fit-up occurs during the outage. Then, at that point, drill and apply fasteners as required based on actual field clearances for bonding material application. Do not attempt to predict and pre-drill the installation holes for the ODAs, but rather drill the holes using the ODA as a template once the backing/filler plates are permanently installed. Use screws, washers and nuts to install the ODAs, rather than a tapped hole. Tighten to flatten the lock washer, versus prescribing a specific torque. Sandblast all components prior to the outage.	Plates will be rough fit during preoutage and a contract machinist furnished by the PRNM project will perform final fit up during the outage. Also all construction sketches have been enhanced to include stich welds and stiffener interferences observed in Unit 1.
88 Work Management / ESRs Item# 15457 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Ensure that part numbers are prescribed and that actual parts are on-hand for fuse blocks that are added to P-608 terminal strips. Many hours of effort and research were necessary to determine the right part numbers, and to locate these parts during the outage. The most difficult parts were the uni-strut spring nuts that had small enough screws to fit the bracket for the fuse block.		Materials to be inventoried upon receipt to verify all components are accounted for.
89 Work Management / ESRs Item# 15479 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Set the new PRNM equipment pre-outage for testing the computer interface, procedures, initial data load, etc.		PRNM equipment will be set up in the computer room in the TAC building (same as Unit 1) for testing and other purposes. Notification will be made when equipment has been set-up.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
90 Work Management / ESRs Item# 15494 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Leave the new Recirculation Flow transmitters drained and valved out until after MSTs 28R and 29R.		EC 46730 has been changed to remove filling and venting of these transmitters.
91 Work Management / ESRs Item# 15459 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Change the ESR specified location of the rear wiring support brackets located below the bay wiring ducts. As shown in the general cabinet arrangement diagrams (with no specified dimensional location), the brackets would not work. These support brackets should be located on the rear side of the bays as installed on Unit 1.		Support brackets to be located are addressed on the general arrangement drawing to be located the rear side of the bays as installed on Unit 1.
92 Work Management / ESRs Item# 15493 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted West,Dawn G	Lift J4 connector off SRMs and IRMs prior to starting the P603 work.		Duplicate of 15445.rgl
93 Work Management / ESRs Item# 15487 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted West,Dawn G	Re-number ERFIS/PPC NUMAC device communications (See Gus Grosch for details).		reference
94 Work Management / ESRs Item# 15456 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Several front enclosure panels were missing and had to be re-ordered during installation phase of P-608. It suggested that these parts be inventoried prior to the outage to ensure the right parts are available when required for installation.		Materials to be inventoried upon receipt to verify all components are accounted for.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
95 Work Management / ESRs Item# 15461 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Remove fluorescent lights from P808.		Specific instructions are included in the wiring section for each bay in 2-H12-P608 of EC 46730 to remove the flourescent lights and associated wiring.
96 Work Management / ESRs Item# 15485 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Investigate option of a new style connector/capture device for the fiber optic cables that have the FDDI style connectors.		Per GE Ed Schmidt the current style capture device is intended to be used for Unit 2. There are no plans to change this design in the future.
97 Work Management / ESRs Item# 15491 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Evaluate the need for a device to support the excess fiber optic cable store in coils in the top of P608.		Responsible Engineer has reviewed this option and has determined this not be feasible for our current application.
98 Work Management / ESRs Item# 15490 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Get 2 I&C technicians in December for pre-outage cable making.		Two technicians have been requested by CWO to begin work in November 2002.
99 Work Management / ESRs Item# 15489 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 1050 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Stacy,Mark G	Provide more time for EC discipline reviews.		EC is currently in the Approved status.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
100 Work Management / ESRs Item# 15488 Outage B114R1 Reviewed: Yes Closed: Yes Outage Date: *5/7/2002* Organization: Extended Power Uprate Responsible:	none_noted West,Dawn G Plt: BNP U#: 1 Sys 1050 *Date Added: 5/7/2002* O&S Rep: Due: NCR:	Two lines of code changed by fuels to auto transfer LPRM GAFTs (see Gus Grosch and Greg Westmoreland for details).		reference
101 Work Management / ESRs Item# 15486 Outage B114R1 Reviewed: Yes Closed: Yes Outage Date: 5/7/2002 Organization: Extended Power Uprate Responsible:	none_noted Stacy,Mark G Plt: BNP U#: 1 Sys 1050 Date Added: 5/7/2002 O&S Rep. Due: NCR:	Get label maker and label matenals pre-outage.		Labels and a label maker have been procured.
102 Work Management / ESRs Item# 15458 Outage B114R1 Reviewed: Yes Closed: Yes Outage Date: 5/7/2002 Organization: Extended Power Uprate Responsible:	none_noted Stacy,Mark G Plt: BNP U#: 1 Sys 1050 Date Added: 5/7/2002 O&S Rep: Due: NCR:	Ensure that specific directions are provided in *the ESR for the P-608 fluorescent* lights. These lights were incorrectly removed during the removal phase of P-608 bays 1 to 5, and could not later be installed due to new interferences. The ESR wiring diagrams had to subsequently revised to eliminate the wiring. Practically speaking, the lights are not needed and take up significant space in a critical area of the bays so they should be removed.		Specific instructions are included in the wiring section for each bay in 2-H12-P608 of EC 46730 to remove the flourescent lights and associated wiring.
Work Management / Materials				
103 Work Management / Materials Item# 15368 Outage B114R1 *Reviewed: Yes Closed: Yes* Outage Date: 4/29/2002 Organization: Extended Power Uprate / Mate Responsible:	Gourlay,Rita Bostic,Steven Carey Plt: BNP U#: 1 Sys 3050 Date Added: 4/29/2002 O&S Rep: Due: NCR:	GE sent nozzle hardware for U/1 RFPT outage that had 94 socket head cap screws that required head machining in order to install. The screw heads arrived sized at 1.121" and needed to be no greater than 1" in diameter. Ensure that the nozzle plate bolts supplied with the new components are of correct dimension and design. This issue needs to be discussed with Curt Kunz of GE in the New York office.		The improperly machined diaphragm component hardware issues have been discussed with Curt Kunz (GE Engineering manager) in Schenectady, NY and Linzy Norris (GE Manufacturing manager) of Bangor, Maine. The lessons-learned item has been entered into GE's corrective action program for resolution within the GE organizations. We will not see the hardware onsite until early 2003 when supplied with the diaphragm sets. Consider this item resolved within GE's corrective action program. SCB 6-4-02

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
Work Management / Modifications				
104 Work Management / Modificatio Item# 15448 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3060 Outage Date: 5/7/2002 Date Added: 5/7/2002 Organization: Extended Power Uprate / Exte O&S Rep: Responsible: Due: NCR:	Raines,Charles W Raines,Charles W	Pipe supports 1-MVD-PS-8560 and 1-MVD-PS-8561 were installed on the MVD drain header per ESR 01-00188. The threaded rods on these supports were bent during installation. AR 58436-02 was written to document this condition.	The contract Craftsmen who installed these rods were instructed on the correct installation of these supports. In addition, the Craftsmen were counciled about raising potential issues to Engineering, before installation is complete.	Per corrective action to AR 58436, permanent plant drawings will be revised to show the bent rods.
105 Work Management / Modificatio Item# 15369 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3060 Outage Date: 4/29/2002 Date Added: 4/29/2002 Organization: Extended Power Uprate / Mate O&S Rep: Responsible: Due: NCR:	Gourlay,Rita Long,Robert G	One of the nozzle plates arrived for U/1 RFPT outage improperly machined, requiring drilling out to allow passage of socket head cap screws through the body of the nozzle plate (one plate was under-drilled at 11/16", the other was correct at 13/16"). Ensure bolt holes in nozzle plates are of the correct dimension.		duplicate. Rgl
Work Management / Planning				
106 Work Management / Planning Item# 24860 Outage B115R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3030 Outage Date: 3/23/2004 Date Added: 3/23/2004 Organization: Maintenance / Extended Powe O&S Rep: Responsible: Due: 3/23/200 NCR:	none_noted	On more numerous occassions than can be counted, firewatch personnel were requested to man firewatch post that during there watch no firewatch was needed. The firewatchs were told by the craft that they did not know if they would be doing any work requiring firewatch or not. This ties up a lot of personnel on a project unnecessarily that had not requested adequate man-power prior to the outage. This also taxes other scheduled projects due to pulling personnel to cover firewatch posts not planned for.	Ensure better planning, coordination and direction with what specific work task the craft worker will be performing. Ensure adequate manpower is requested prior to the work actually being performed. Have man power contengencies for problems that could arise.	This has been included in the challenges to ensure resources available.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
Work Management / Practices 107 Work Management / Practices Item# 25237 Outage B115R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys Outage Date: 4/12/2004 Date Added: 4/12/2004 Organization: Operations / Extended Power O&S Rep: Responsible: Stuart Byrd Due: 10/12/20 NCR:	Byrd,Stuart E Scott,Kenneth D	More than two dozen people had to be contacted about expired hot work permits during the B115R1 outage.	Establish a method for the craft to track expiration dates and request extensions or cancel the permit as required.	On average, more than 140 permits are issued per outage. The permit is reviewed by the Lead person at least twice per day. The lead person is responsible to keep the permit up to date and accurate. Operations should continue to review the hot work permit log and contact owners if the permit has expired. One option, if the owner does not respond or maintain the permit, is to pull and cancel the permit. This will generate the attention needed and inforce the Lead persons responsibilities.

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
108 Work Management / Practices Item# 15318 Outage B114R1 Reviewed: Yes Closed: Yes Plt: BNP U#: Sys 3050 Outage Date: 4/4/2002 Date Added: 4/4/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted Bostic,Steven Carey	THE STEAM CUT WAS IDENTIFIED JUST PRIOR TO REINSTALLATION OF THE DISCHARGE PIPING TO 1B RFPTPUMP FLANGE. HAD THIS DEFECT BEEN IDENTIFIED EARLIER IN THE OUTAGE, IT MIGHT HAVE BEEN TREATED WITH LESS URGENCY AND CYCLED MACHINISTS TO A TIME WHEN THAT SPECIFIC CRAFT WAS IN LESS OF A DEMAND ELSEWHERE IN THE OUTAGE. THE FACT THAT THIS FLANGE WAS ON THE SAME PIPING THAT HAD ALREADY RECEIVED CONSIDERABLE ATTENTION WITH ITS LENGTHY SUSPENSION WITHIN THE ROOM AND THE ELECTIVE FLANGE GROOVE/TONGUE MACHINING THAT TOOK PLACE ON ITS OTHER FLANGE LARGELY CONTRIBUTED TO THE STEAM CUT NOT BEING OBSERVED OR IDENTIFIED AT A MORE APPROPRIATE TIME. HAD THE STEAM CUT NOT BEEN DETECTED PRIOR TO REASSEMBLY, IT IS QUESTIONABLE AS TO WHETHER OR NOT AN ADEQUATE SEAL COULD HAVE BEEN ESTABLISHED AT THE GASKET JOINT AS NO INDICATION OF PREVIOUS LEAKAGE IN THE STEAM CUT AREA WAS OBSERVED. IT IS NOTKNOWN WHETHER THIS PARTICULAR FLANGE WAS OVERLOOKED WHEN THE REMAINDER OF THE FLANGES WERE INSPECTED, HONED AND CLEANED OR IF IT WAS INSPECTED, THE STEAM CUT WAS MISSED OR REGARDED AS INCONSEQUENTIAL. THE URGENCY OR TIMING ASSOCIATED WITH BREAKING PIPING FLANGES AND PERFORMING VISUAL FLANGE INSPECTIONS IS NOT PROCEDURALIZED NOR SHOULD IT BE SCHEDULED. HOWEVER, A MORE PROMPT AND THOROUGH INSPECTION MIGHT HAVE CAPTURED THIS ISSUE EARLIER IN THE OUTAGE THUS PROVIDING US ADDITIONAL TIME TO MAKE DECISIONS.THE PROJECT MANAGER AND SUPPORT TEAM WERE COUNSELED REGARDING THE NEED TO QUESTION AND CHALLENGE WHETHER SURPRIZES AND UNKNOWN ISSUES EXIST WELL IN ADVANCE OF REASSEMBLY ACTIVITIES IN THE FUTURE. THIS REPORT WILL BE SHARED WITH GE TO SERVE AS A LESSONS LEARNED ISSUE TOWARDS PLANNING THE 2003 RFPT OUTAGE. NO FURTHER INVESTIGATION REQUIRED.	Ensure that piping flanges are inspected during disassembly or as soon as disassembly complete. Add this as a scheduled activity.	System scheduler (Roy Kuhns) will add a line item for each room reporting that upon compleling RFPT turbine and piping disassembly, all piping flanges are to be inspected for damage and an assesment of any repairs resulting from the flange inspection performed by the project manager. This issue has been discussed with GE and is entered as a line item in the RFPT schedule. Consider this item closed. SCB 7-3-02

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
109 Work Management / Practices Item# 15320 Outage B114R1 Eason Sr.,Terry W Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3055 Outage Date: 4/4/2002 Date Added: 10/10/2002 Organization: Extended Power Uprate / Othe O&S Rep: Responsible: Due: NCR:	Eason Sr.,Terry W	The FWH schedule assumed the minimum number of welds for fit-up. An additional 7 large-bore RT welds were required to complete FWH fit-up. Problems were encountered in the performance of Radiography of FW heater welds. These problems included unsatisfactory weld quality (10 of 13), difficulty in distinguishing weld defects from weld crown and unnecessary evacuation of adjacent FW heater rooms during RT shots after the initial series. Due to problems that QC had in distinguishing weld defects from weld crown, project management decided to "flat grind" FWH welds. This resulted in significant additional work. The RT contractor did appear to have any responsibility with the RT film quality.	Review required NDE for FWH welds. Consider the use of UT vs RT for FWH piping. Also, the use of UT for root or intermediate pass welds should be considered to avoid rework. Ensure that appropriate preparations are made to eliminate RT film quality problems. Review the need to "flat grind" welds on the FWH. If significant grinding required, develop project plan to maximize separation and containment of grinding operations. Consider contract structure that makes the contractor responsible for the film quality, i.e., no charge for rework of RT shots. In addition, the FWH schedule should reflect the number of welds required to support the Unit 1 5A/5B FWH fit-up.	Based on the results of meeting between project personel and QC discussing the merits of performing NDE utilizing UT instead of RT for welds on the feedwater inlet and outlet piping, it was agreed that we would continue performing NDE utilizing RT. The project has agreed to flat top the welds prior to RT as an aid to QC in their film interpretation. The project will evaluate the work area to ensure the appropriate method and controls (i.e. separation of personnel and the possible use of barriers) are in place while the welds are being flat topped. The project has included additional instructions in the work order task regarding the proper installation of gamma ports. When feasible, QC will align the RT source from the ID of the feedwater piping to ensure proper source alignment. QC has revised their contract with the RT contractor in order to establish better control of the contractor's work and associated cost. The 4B FW heater replacement project schedule will ensure the appropriate durations are reflected in the work activities associated from the feedwater piping work and associated RTs.
110 Work Management / Practices Item# 15252 Outage B114R1 Long,Robert G Reviewed: Yes Closed: Yes Plt: BNP U#: Sys 3050 Outage Date: 3/20/2002 Date Added: 3/20/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted	During the RFPT replacement project personnel failed to inspect the piping flanges until just prior to reassembly. Upon inspection, the RFP discharge piping flange was found to have a steam cut, requiring two shifts to repair. 1B RFPT reassembly was delayed until this work was completed.	Ensure that project planning and implementation includes inspection of piping and flanges early in the RFPT disassembled inspection period.	duplicate. rgl
Work Management / Scheduling 111 Work Management / Scheduling Item# 15319 Outage B114R1 Bostic,Steven Carey Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys 3050 Outage Date: 4/4/2002 Date Added: 4/4/2002 Organization: Extended Power Uprate O&S Rep: Responsible: Due: NCR:	none_noted	An excessive amount of time was required to complete RFPT alignment. The problem was eventually determined to be due to misassembly of the pump piping that caused alignment changes to be unpredictable. The RFP discharge piping flanges were loosened, pump-turbine alignment completed and piping reassembled. In addition, significant problems were encountered due to shim plate condition, broken jack bolts and stripped hold-down bolts. These problems added several shifts to the RFPT schedule.	Develop an alignment plan for RFPT as part of the next outage plan/schedule. Ensure that actions are taken earlier to address binding due to piping assembly or cold-spring. Include inspection, cleaning and preparation of the RFP pedestal to ensure that problems are not encountered with shims, jack bolts, hold-down bolts, etc. during alignment.	Development of an alignment plan and readiness activities to properly prepare the RFPT pump skids for alignment purposes will be developed as part of the schedule for RFPT work. Crew Z63 has accepted resopnsibility for conducting the operation of the laser alignment equipment in pursuit of both pump alighments. GE has agreed to support the alignment with bolting labor to modify and adjust shims as required to achieve proper pump to turbine alignment. Tickets are initiated to weld on the necesasary alignment jacking bolt fixtures to the pump foundation plate. This work has been accepted by Z63 to be performed during the maintenance work window in the outage, unless a lenghty downpower or two day shutdown occurs prior to the outage. Consider this item closed. SCB 7-3-02

Lessons Learned for BNP

Extended Power Uprate

Category/SubCategory	Originator/ Editor	Description	Recommendation	Disposition
Work Management / Status *112* Work Management / Status Item# 25225 Outage B115R1 Reviewed: Yes Closed: Yes Plt: BNP U#: 1 Sys Outage Date: 4/6/2004 Date Added: 4/6/2004 Organization: Maintenance / Extended Powe O&S Rep: Responsible: Due: 4/6/2004 NCR:	Byrd,Stuart E Byrd,Stuart E	We need to do a better job statusing work. Many times predecessors were not signed off as work was completed which delayed other activities. Numerous times, clearances would be released, but passport and/or progress reporter would not be updated showing the status of work. Clearance release codes or special instructions were not routinely used to tell Operators the reason WO's could not be finished in passport. This delayed lifting clearances while the SRO tried to obtain the correct status.	Provide training and make it an expectation that all work is statused in all data bases prior to releasing the clearance. Make it a resposibility of the OOM/MOM to verify this is done prior to contacting the Ops Center to have the clearance lifted.	This has been sent to the shops for improvements.

FLORIDA PUBLIC SERVICE COMMISSION
AUDIT DOCUMENT/RECORD REQUEST
NOTICE OF INTENT

TO: Maritza Iacono

UTILITY: Progress Energy Florida

Carl Vinson
AUDIT MANAGER

FROM: Carl Vinson

REQUEST NUMBER: DR-5

DATE OF REQUEST: 5/28/08 - Due 6/09/08

AUDIT PURPOSE: Nuclear Controls Review

REQUEST THE FOLLOWING ITEM(S) BE PROVIDED BY: Maritza Iacono
REFERENCE RULE 25-22.006, F.A.C., THIS REQUEST IS MADE: ___ INCIDENT TO AN INQUIRY

x OUTSIDE OF AN INQUIRY

ITEM DESCRIPTION:

1) a. To the extent not previously provided in a document request response, please provide copies of all Levy plant and CR3 Uprate bid evaluations and selection recommendations for all contracts of $1,000,000 or more that have been awarded to date.

b. Please provide copies of all written justifications for sole source selection of Levy plant and CR3 Uprate contractors for all contracts of $1,000,000 or more that have been awarded to date.

2) a. Please list and briefly describe any "lessons learned" from Progress Energy's North Carolina nuclear unit uprates that have been incorporated into the planning, design or implementation of the CR3 uprate.

b. Please indicate for each of Progress Energy's North Carolina nuclear unit uprates whether the project was completed on schedule and within budget.

c. Please provide the original cost estimate and the final completed cost for each of Progress Energy's North Carolina nuclear unit uprate projects. If applicable, provide a brief description of why completion costs exceeded the estimate(s).

3) Please describe in detail how the company is maintaining awareness of the status of the Westinghouse AP1000 unit under construction in China.

4) Please provide a copy of the March 28, 2008 Westinghouse/Shaw-Stone & Webster Letter of Intent and any transmittal correspondence.

TO: AUDIT MANAGER Carl Vinson DATE: 6/9/08

THE REQUESTED RECORD OR DOCUMENTATION:

(1) [X] HAS BEEN PROVIDED TODAY

(2) [ ] CANNOT BE PROVIDED BY THE REQUESTED DATE BUT WILL BE MADE AVAILABLE BY _____

(3) [X] AND IN MY OPINION, ITEMS(S) 2 IS (ARE) PROPRIETARY AND CONFIDENTIAL BUSINESS INFORMATION AS DEFINED IN 364.183, 366.093, OR 367.156 F.S. TO MAINTAIN CONTINUED CONFIDENTIAL HANDLING OF THIS MATERIAL, THE UTILITY OR OTHER PERSON MUST, WITHIN 21 DAYS AFTER THE AUDIT EXIT CONFERENCE, FILE A REQUEST FOR CONFIDENTIAL CLASSIFICATION WITH THE DIVISION OF COMMISSION CLERK AND ADMINISTRATIVE SERVICES. REFER TO RULE 25-22.006, F.A.C.

(4) [ ] THE ITEM WILL NOT BE PROVIDED. (SEE ATTACHED MEMORANDUM)

SIGNATURE AND TITLE OF RESPONDENT Maritza M. Iacono
Supervisor - Regulatory Planning

PAGES 1 THROUGH 13 RESPONSIVE
TO THIS REQUEST ARE CONFIDENTIAL

Assessment Team:

C. Bergstrom	PES CR3 – Team Lead
W. Nielsen	NP&C – Host Peer
R. Steele	PES Supervisor Corporate
R. Watson	PES Corporate
A. Williams	PES Corporate
R. Garner	PES HNP
J. Becker	PES BNP
J. Long	PES RNP
E. Caba	Engineering Supt. RNP
R. Velat	Sr. Auditor, PEF
J. Dobbs	Gen. Mgr. Constellation Energy, Major Projects
R. Bayer	Pres. Old Dominion Project Team, Inc.

(Original signed by Carl Bergstrom)
Lead Assessor

Details of Assessment Activities

Documents Reviewed including revision numbers:

Procedures:

ACT-SUBS-00261	14	Project Evaluation and Authorization Process
ACT-SUBS-00262	6	Economic Evaluation Methodology
ADM-CAPX-00001	0	Project Assurance Program Manual
ADM-SUBS-00080	0	Major Capital Projects Integrated Project Plan
ADM-NGGC-0107	7	Equipment Reliability Process Guideline
AI-301	9	Plant Nuclear Safety Committee Charter
AI-607	21	Pre-Job and Post Job Briefings
CAP-NGGC-0200	19	Corrective Action Program
CAP-NGGC-0205	5	Significant Adverse Condition Investigations
CAP-NGGC-0206	2	Corrective Action Program Trending and Analysis
EGR-NGGC-0005	27	Engineering Change
EGR-NGGC-0007	9	Maintenance of Design Documents
EGR-NGGC-0008	6	Engineering Programs
EGR-NGGC-0011	11	Engineering Product Quality
FRM-SUBS-00690	10	Phase Project Authorization Form
FRM-SUBS-00693	5	Project Authorization Rev. Variance Analysis Form
NGGD-1400	6	NGG Self Evaluation Program
NGGM-PM-0012	4	NGG Change Management Program
NGGM-PM-0023	1	Work Force Attrition Management Program
SGR-003	0	SGR Project Plan - Fabrication
SGR-003A	0	SGR Project Fabrication Oversight
SGR-003C	2	SGR Project CAP Interface
SGR-004	1	SGR Program Quality Assurance Plan - Installation
Procedure No. pending	1	NP&C Plant Nuclear Safety Committee Charter

Nuclear Condition Reports:

214963	247420	254145	267090
217195	247570	257275	267122
235891	248919	257592	267338
235893	250175	261790	267383
239826	251122	266402	267795
241486	251134	266402	267090
246462	253635	266725	267122
246831	254110	266983	267338

NAS Assessment Reports:

C-MP-06-01, Major Projects

Self-assessments:

142401	142402	173571	173574
173574	217195	217191	

Benchmarks:

142419	142421	173568	173569
183168	217196	217199	217200
246291			

Other:

Action Item Management System (AIMS) Database
Business Objects Training Manual
CR3 Engineering and SGR Project Interface Agreement, approved 02/21/06
CR3 Refuel Outage R15 Schedule, Leading Flow Edge Meters, RCS Letdown Line Modifications
HNP-SGR Lessons Learned
NP&C CAP Roll up and Trend Analysis Report, 4th Quarter 2007
NP&C Contracts, 101659, 297127, 3701, 234768, 298506, 260269
NP&C KPI Reports 2007, 1st Quarter 2008
NP&C PASSPORT Personnel Qualification Database
NP&C Schedule Exception Report, 02/25/08
NP&C SGR Outage Milestones
NP&C Staffing Plan
NP&C Weekly Project Detail Reports
Progress Energy (HOCO) Department Record Retention Schedule Guidelines
Progress Energy Organizational Chart – NP&C

Interviews

NP&C Organization:

- Vice President
- Managers (4)
- Superintendents
- Supervisors (5)
- Leads (6)
- Engineers (4)
- Schedulers (3)
- Financial Analysts (2)
- SEU Evaluator (1)
- Safety Representative (1)

CR3 Organization:

- Managers (5) Superintendent/Supervisors (12)
- System Engineers (2)
- Emergency Preparedness Leads (2)
- QC Inspector – Level 3 (1)

CR Site Organization:

- CR Superintendent - Shift Fossil Operations (1)
- Supervisor, Substation and Transmission (1)

Observations:

- NP&C Crane Design Review Meeting
- NP&C Management Review Meetings, 01/22/08, 02/04/08, 02/25/08
- NP&C Schedule Exception Meetings, 02/04/08, 02/11/08, 02/25/08
- CR3 and NP&C Management Interface Meetings, 02/07/08, 02/20/08, 02/27/08
- NP&C Weekly Project Hour Review Meeting, 02/27/08

Details

Reviewed the following:

- Organizational structure and staffing plans
- Training and qualification of personnel
- Procedure use and adherence
- Procurement activities (services and material) and material control
- Use of the Corrective Action Program
- QA records
- Use of Operating Experience.
- 2007 self-assessments and 2008 self-assessment schedule

Regulatory-Required Assessment

During this assessment, INPO Performance Objectives and Associated Criteria, 10 CFR 50 Appendix B, and The Company's Quality Assurance Program were used in evaluating the performance of Nuclear Projects and Construction as agreed upon in drafting the assessment planning letter. No Issues, Weaknesses, or IFMC were developed pertaining to the following criteria which were used as a basis for the assessment. They are listed with a brief comment to indicate where the program currently stands.

OR.1 Organizational Effectiveness

Performance Objective:

The organization's values and behaviors—modeled by its leaders and practiced by its members—serve to make nuclear safety the overriding priority.

Criteria:

1. Responsibility, accountability, and authority for nuclear safety are well defined, clearly understood, and effectively implemented.
2. Executives, managers, and supervisors are leading advocates of nuclear safety and demonstrate their commitment both in word and action.
3. A high level of trust is established in the organization, fostered through timely and accurate communications and demonstrated through a free flow of information in which issues are raised and resolved.
4. Plant personnel are systematic and rigorous in making decisions that can affect nuclear safety.
5. Decisions and actions take into account the unique characteristics of nuclear technology, including the stored energy, decay heat, and radioactive byproducts contained in the reactor core.
6. Individuals demonstrate a questioning attitude by challenging assumptions, investigating anomalies, and considering potential adverse consequences of planned actions.
7. Organizational learning is embraced through activities such as training, benchmarking, and self-assessments, as well as through the use of operating experience.
8. Nuclear safety is kept under constant scrutiny through a variety of monitoring techniques, including periodic independent evaluations.

Status: PES reviewed this area during the assessment and determined that the NP&C leadership demonstrates high standards for nuclear safety by way of word and action. NP&C faces the challenge to effectively communicate these standards to interfacing organizations; such as CR3 and Fossil generation.

OR.2 Leadership and Management

Performance Objective:

Managers, by leadership, commitment, and example, establish and reinforce high standards of performance and align the organization to achieve safe, reliable station operation.

Leadership and Management

1. Managers establish, communicate, and reinforce high expectations and standards of performance and hold personnel accountable for implementing these standards. Shortfalls in meeting expectations are evaluated, understood, and addressed promptly.
2. Managers demonstrate high levels of integrity and serve as role models for others to emulate.
3. Managers implement policies, procedures, and practices that reflect a strong commitment to nuclear, radiological, industrial, and environmental safety. Managers communicate the bases for the policies, procedures, and practices to the workforce.
4. Managers demonstrate a broad knowledge of their areas of responsibility and integrate their actions with the functions and activities of other station and corporate organizations.
5. Managers effectively engage the workforce to accomplish site goals, priorities, and improvement activities.
6. Managers establish a continuous learning environment that encourages the workforce to improve individual and station performance.
7. Managers practice visible leadership in the field by personally observing problems, coaching, mentoring, and reinforcing standards.
8. Line managers are accountable for the training, qualification, and performance of station personnel.
9. Station and supplemental personnel establish and promote high standards of performance through teamwork and collaboration. Mutual trust and respect are established through active engagement of supplemental personnel in project planning and resolution.

Direction and Expectations

10. Managers set clear direction and priorities that are understood by the workforce, and they align the organization to achieve common goals.
11. Managers foster and communicate a vision of excellence and set challenging performance goals.
12. Managers establish clear lines of authority, roles, and responsibilities for station activities.
13. Managers encourage and foster cooperation and teamwork among station organizations, especially when successful implementation of work activities requires support from several groups.

Planning and Implementing

14. Managers ascertain that staffing is sufficient, including that personnel have requisite knowledge, skill, and proficiency to accomplish tasks to achieve safe and reliable plant operation.
15. Resource needs, such as capital, equipment and parts, and information are identified and integrated into business plans and are met.
16. Change initiatives are well managed and coordinated.
17. Site initiatives and routine activities are integrated and aligned considering the availability of resources.

Monitoring and Assessing

Managers routinely monitor personnel, process, and equipment performance and take action to correct improper behaviors, process deficiencies, and conditions that do not meet expectations.

18. Managers systematically monitor the progress of changes to ensure the intent of each change is met and to identify possible unintended consequences.
19. Managers maintain the organization's focus on achieving safe, reliable plant operation during periods of significant change or other potential distractions.
20. Managers ensure that work performed by supplemental personnel receives appropriate oversight and monitoring.
21. Managers actively seek and use diverse perspectives to challenge current performance, standards, and decision as a means for continuous improvement.

Follow-Up, Reinforcement, and Feedback

22. Managers follow through on directions and change initiatives to reinforce expectations, resolve conflicts, adjust priorities, and initiate actions, as necessary, to achieve safe and reliable station operation. Changes in priorities are communicated effectively.
23. Managers reinforce behaviors that improve performance. They acknowledge the accomplishments of others and the importance of individual contributions to overall performance.
24. Managers demonstrate and reinforce the attitudes and behaviors necessary to achieve a safe working environment.

Status: PES reviewed this area during the assessment and determined that the NP&C organization is focused on high standards and demonstrates this by accountability for poor performance and recognition for good performance.

OR.3 Human Performance

Performance Objective:

Station personnel select and apply appropriate human error prevention techniques commensurate with the importance of assigned tasks to minimize the frequency and consequences of events.

Criteria:

Organizational Factors

1. Expectations for the use and reinforcement of error prevention tools in all work and instructional settings are clearly established and communicated to workers and managers, including supplemental station personnel.
2. Managers establish expectations for procedure use that take into account the complexity of the task, the skill and training of the worker, the extent of supervisory involvement, and the potential consequences of improper performance.
3. Procedures and other work documents are usable, technically accurate, and controlled and are maintained up to date.
4. Changes in outage and on-line work plans and schedules are critically reviewed for conditions that could lead to human error or result in an undesirable impact on the plant.
5. Feedback processes, including post job reviews and management observations, are used to improve human performance.
6. Human performance events and trends are closely monitored, thoroughly evaluated for causes and contributors, and communicated to station personnel to increase their understanding and awareness.
7. Station processes are used effectively to reduce error-likely conditions at the job site.

Job-Site Conditions

8. Goals, roles, and responsibilities for the assigned task are discussed and understood before work begins.
9. Assigned personnel are technically qualified for the task and are physically and mentally ready to perform the work.
10. Job-site conditions are properly established to enable qualified personnel to accomplish work assignments successfully.
11. Job-site conditions and potential consequences are carefully evaluated to reinforce desired work behaviors, to reduce the potential for human error.
12. Work preparation and prejob briefings are conducted commensurate with the risk of the work activity.
13. A variety of defense-in-depth measures are used at the job site, commensurate with the risk of the work activity, to reduce the probability of error, as well as to mitigate the effects of and provide for recovery from error.

Individual Behaviors

14. Individuals demonstrate a great respect for the reactor core—for reactor safety—in their decisions and actions and seek additional support when faced with uncertain conditions or situations not addressed by approved procedures and policies.
15. Individuals demonstrate personal integrity, have a questioning attitude, challenge assumptions, and consider potential consequences prior to taking actions.
16. Individuals accept responsibility for their shortfalls and hold themselves and others accountable to high standards of performance.
17. Individuals understand the error prevention techniques, as well as the management expectations and bases for applying each technique to avoid plant events.
18. Individuals adhere to safety standards, follow procedures, and correct procedure deficiencies before continuing with tasks.
19. Individuals recommend improvements and willingly report problems, near misses, error-likely situations, and safety hazards.
20. Individuals communicate freely, openly, and accurately to support each other to accomplish assigned work.
21. Individuals identify and eliminate conditions that might lead to human error. They reinforce the use of defenses that mitigate the consequences of errors.
22. Individuals are receptive to feedback and continuously strive to improve their knowledge, skills, and performance. They coach and provide feedback to others.

Status: PES reviewed this area during the assessment and determined that the NP&C organization faces the same human performance challenges as the rest of the fleet. The expectation for using Human error prevention tools in all work are clearly in place and communicated to all workers and managers. This includes the contract support personnel.

OR.4 Management and Leadership Development

Performance Objective:

Individuals with management and leadership potential are identified, developed, and assessed on an ongoing basis to prepare the candidates for positions of increased responsibility

Criteria:

1. A profile defining the competencies required for key jobs is established and is used to identify candidates for leadership positions and guide their development.
2. Senior nuclear managers identify candidates for leadership positions and remain active in their development.
3. Candidates for leadership positions are individually developed through training and assignments in a variety of positions within the nuclear organization.
4. Opportunities are provided for managers to work with and emulate recognized role models to reinforce effective management and leadership skills.

5. Managers receive coaching and participate in continuing training programs to reinforce and improve leadership and managerial skills.
6. Opportunities are provided for managers to broaden their nuclear experience, such as through benchmarking of other stations and utilities and assignments at nuclear industry organizations.
7. On an ongoing basis, senior nuclear managers assess the progress of individuals identified as having management and leadership potential and their readiness for future management positions.
8. Succession plan activities are in place for key corporate and station management positions. These plans identify candidates for each position and highlight the readiness of each candidate to fill the position.
9. Succession plan activities are reviewed periodically for effectiveness. Adjustments are made to the plan and implementing activities, as needed.
10. Feedback and assessment tools are available for managers to evaluate the effectiveness of their personal leadership

Status: PES reviewed this area during the assessment and observed the NP&C management actively developing leadership roles by example and benchmarking good performers.

OF.2 Operational Decision Making

Performance Objective:

Operational decisions are reached using a systematic and thorough method that supports safe, reliable plant operation.

Criteria:

1. Roles and responsibilities for making operational decisions and implementing actions are formally defined and are understood by plant personnel.
2. Any condition that can adversely affect safe, reliable operation is promptly identified and considered for a systematic decision-making review.
3. The scope, consequences, and significance of the condition are clearly defined, and alternative decision paths are evaluated thoroughly. Evaluations include a thorough review of in-house and industry operating experience. Personnel with necessary knowledge, skill, and experience are included in the review.
4. Operational decisions are based on a full understanding of short- and long-term operational risks, as well as the potential effects of various alternatives. Clear direction, including contingencies and abort criteria, is established.
5. Plans for implementing operational decisions clearly communicate the bases for the decisions, as well as the expected actions, responsibilities, compensatory measures, and contingencies that will ensure successful outcomes.
6. Lessons learned from past decisions are reinforced with station personnel and are factored into future decisions.

Status: PES reviewed this area during the assessment and reviewed operational risk documents that effectively addressed safe reliable plant operation.

OF.3 Operational Alignment

The site organization works together to support safe, reliable plant operation.

Criteria:

Identification and Resolution of Plant Operational Problems

1. Personnel at all levels of the organization promptly identify and communicate to shift management operational problems that can adversely affect plant safety and reliability.
2. Shift managers are a participative and integral part of the management team and champion the resolution of plant operational issues. The effects and potential consequences of operational problems are clearly communicated to support groups.
3. All effects on plant design, licensing requirements, and other important operational impacts are clearly communicated to operations personnel.
4. Work groups understand their roles and responsibilities in addressing operational needs, and they work together to resolve issues.
5. Long-term plans are developed and implemented to address chronic plant problems that challenge safe operation or those overly burden the operating staff with compensatory actions.

Operational Teamwork

6. Operations, maintenance, work management, and other groups work together to clearly define and control the boundaries between equipment removed from service and the operating plant. Clearance and tagging activities are performed in a manner that protects workers and plant equipment.
7. Station personnel perform activities that change plant component positions to consistent, high standards that ensure the plant configuration is maintained in accordance with plant procedures, temporary modifications, and other configuration controlling documents at all times.
8. Operations, engineering, and other groups interface such that operating, testing, and other procedures are clear, technically accurate, and written in a manner that enhances human performance.
9. Operations personnel, training personnel, and individuals responsible for emergency and abnormal procedure guidance work together to ensure emergency and abnormal procedures are written in accordance with applicable owner's group guidance, plant-specific emergency procedure guidelines, plant-specific probabilistic safety analyses, and vendor technical manuals.
10. Station personnel maintain the visible plant condition such that there are no obstructions to plant equipment and equipment deficiencies can be readily identified. Oil and water leaks are wiped up promptly and are contained, and component labeling remains clear.
11. Personnel responsible for planning and overseeing nuclear fuel and its movement coordinate activities such that nuclear fuel is moved in accordance with core

design limits and in a manner that prevents damage to the fuel and vessel components.

12. Station and grid operations personnel coordinate activities that potentially affect off-site power sources or the stability of the electrical grid to ensure safety and reliable operation.

Operational Awareness and Knowledge

13. Workers are trained on the potential effects that their activities could have on plant operation. Procedures, work plans, and other work controlling documents include cautions and statements of impact regarding the effect of the task on plant operation.

14. Operational knowledge and experience exist throughout the station organization.

Status: This area was reviewed and found effectively implemented. Work groups understand their role and demonstrate this in operational support documents that support modifications, and discussions at design review board meetings.

CM.1 Configuration Management

Performance Objective:

System and component margins are understood, considered in decision-making, and managed consistent with design and licensing requirements.

Criteria:

1. The effects of changes on design and operating margins are identified, evaluated, and documented before the changes are approved for implementation.
2. Engineering calculations and analyses address design and operating margins and the bases for the margins. Senior management is involved with decisions on reducing margins that affect safety and reliability.
3. Engineering programs, testing, and predictive and preventive maintenance activities confirm that systems continue to provide assumed design margins.
4. Degraded conditions that reduce design or operating margins for systems important to safety and reliability are identified, evaluated, understood, and mitigated.
5. The operational impact of reduced margins is communicated to the plant operators.

Status: This area was reviewed and found effectively implemented. Work groups understand their role and demonstrate this in operational support documents that support modifications, and discussions at design review board meetings.

CM.2 Operational Configuration Control

Performance Objective:

Plant activities are conducted in a manner that maintains configuration control and operating and design margins.

Criteria:

1. Conditions that could result in systems being outside of operating and design requirements are evaluated and resolved on a schedule commensurate with their importance to safety and reliability.
2. Controls, such as valve lineup sheets, are in place to maintain the plant within design and licensing bases, including during tests and infrequent evolutions.
3. The bases for emergency and abnormal operating procedures are documented and controlled, and time-based actions are validated.
4. Personnel control activities that affect the status of systems and equipment, including out-of-service time, to ensure plant configuration is consistent with station probabilistic safety assessment and station safety analyses.
5. Processes are in place to formally communicate important technical information and recommendations regarding configuration control to the plant staff.
6. Parts and materials are procured to meet quality and design specifications, and they are controlled and stored to maintain traceability and quality.
7. Documents and software used to operate, design, and maintain important plant equipment are kept current as changes are made through operating license amendments, plant modifications, calculation revisions, and other change processes.
8. The physical configuration of the plant meets design and license bases. The configuration is consistent with procedures, drawings, and other documentation.
9. Physical plant configuration is confirmed through routine plant activities, including walk downs, maintenance testing, and field observations.

Status: NP&C is effectively meeting this performance objective. The assessment team was able to observe this by reviewing Engineering Change packages and interviewing Engineering staff.

CM.3 Design Change Processes

Performance Objective:

Processes used to maintain consistency of plant configuration, design, and licensing bases are clearly defined and are implemented properly. Changes to plant configuration and design and licensing bases are effectively analyzed, controlled, and implemented.

Criteria:

1. The design authority is clearly identified. Limits and controls for design activities are established and used.
2. Roles, responsibilities, and processes for managing, reviewing, and approving design and license bases changes are clearly defined and followed.
3. Design calculations, drawings, analyses, procurement specifications, and other design documents are readily retrievable and clearly describe the bases for the form, fit, and function of plant systems and components.

4. Proposed design changes receive interdisciplinary input and reviews to verify technical suitability and to improve operability and maintainability of the resulting plant modification.
5. Procedures, drawings, training lesson plans, and related documentation are updated promptly following implementation of configuration changes.
6. Temporary modifications are reviewed periodically for continued need and to identify changes that are inconsistent with the licensing and design requirements. Temporary modifications are normally removed within a refueling cycle.
7. Engineering products are developed with appropriate consideration of possible failure modes and effects.
8. Roles and responsibilities for design activities performed by supplemental personnel are clearly defined, including station support duties to ensure engineering products receive appropriate input and support. Engineering products provided by supplemental personnel and equipment manufacturers receive challenge reviews or acceptance testing to demonstrate acceptable performance before implementation.

Status: NP&C organization is effectively meeting this performance objective. This was demonstrated in the interviews with Engineers and review of Engineering Change Packages.

PI.1 Performance Improvement

Performance Objective:

Self-assessments and benchmarking are used to improve performance.

Criteria:

Self-Assessment

1. Ongoing and periodic self-assessments are used to identify safety concerns and to improve performance by comparing current performance to industry standards of excellence.
2. Performance monitoring activities, including self-assessments, are critical and compare actual performance to established targets and management expectations, performance of other high-performing organizations, industry standards of excellence, and regulatory requirements to identify performance gaps needing closure.
3. Performance information, such as completed self-assessments, performance indicators, observation results, trend data, and input from independent oversight groups, is routinely analyzed to identify issues for heightened management attention and depicts to management an objective picture of department and station performance.
4. Improvement needs identified by self-assessments are assigned for action and tracked through completion.
5. Skilled, knowledgeable internal and external personnel perform self-assessments.

6. Managers and coworkers frequently observe work and training activities to recognize strong performance and to identify needed improvements.
7. The organization supports and learns from participation in self-assessments and evaluations at other facilities.
8. Self-assessment results are communicated to affected work groups and individuals.
9. Self-assessment and corrective action program effectiveness is periodically assessed, and the programs are adjusted based on the results.

Benchmarking

10. Benchmarking is used as a tool to solve problems, improve performance, and emulate best industry practices.
11. Benchmarking activities have a clear scope, objectives, and deliverables. Improvement needs identified through benchmarking are assigned for action and tracked through completion.

Status: NP&C regularly use benchmarking, both formal and informal, with Fleet and Industry groups. NP&C is effectively meeting this performance objective.

B. QA Program Manual, NGGM-PM-0007

Performance Objectives:

- Section 4.0 Procurement Control
- Section 6.0 Procedures and Drawings
- Section 7.0 Indoctrination and Training
- Section 14.0 Quality Assurance (QA) Records and Document Control

Status: NP&C is effectively implementing the Quality Assurance Program Manual, NGGM-PM-0007. Work packages and engineering documentation indicate meeting these performance objectives. PES team reviews of Training and indoctrination records and staff interviews indicate the QA Program Manual requirements are also being met.

Attachment 3

Nuclear Projects and Construction Assessment

08-14-MOD-CR3

Crystal River Unit 3

Area of Concentration: Staffing

Written by Ron Bayer

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