U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50-254; 50-265
Licenses No:	DPR-29; DPR-30
Reports No:	50-254/97007(DRS); 50-265/97007(DRS)
Licensee:	Commonwealth Edison Company
Facility:	Quad Cities Nuclear Power Station Units 1 and 2
Location:	22710 206th Avenue North Cordova, IL 61242
Dates:	April 21-25, 1997
Inspectors:	N. Shah, Radiation Specialist D. Hart, Radiation Specialist
Approved By:	T. J. Kozak, Chief Plant Support Branch 2 Division of Reactor Safety

EXECUTIVE SUMMARY

Quad Cities Nuclear Power Plant, Units 1 and 2
NRC Inspection Reports 50-254/97007; 50-265/97007

This inspection included a review of radiation protection performance during the Unit 2 refueling outage (Q2R14). Included in the review were as low as reasonably achievable (ALARA) planning and controls, source term reduction, and radworker performance. Also reviewed were two events: (1) poor control during reactor water cleanup (RWCU) system valve work which resulted in one worker receiving an unplanned intake of radioactive materials and (2) the release of contaminated materials to an offsite salvage yard. The report covered a one week inspection concluding on April 25, 1997.

Overall, the radiological controls implemented during the outage were good. In particular, the consideration of emergent and contingent work in pre-outage planning resulted in more conservative ALARA initiatives than were used in the past. The inspectors observed the implementation of good ALARA controls and source term reduction initiatives and good radworker practices. However, recurrent problems were noted with identifying the extent of scaffolding needs prior to the outage, with engineering support for lead shielding activities, and with work groups not providing accurate man-hour estimates to RP for ALARA planning. Additionally, problems were noted with worker knowledge of management expectations and with communication of these expectations in radiation work permits (RWPs). Two violations were identified including (1) the failure to provide adequate engineering controls during RWCU valve work and (2) the failure to follow station procedures regarding the unrestricted release of material from the radiologically posted area (RPA). The similarity of the RWCU event to other past events indicated that the planning and implementation of valve work was still in need of improvement.

Report Details

R1 Radiological Protection and Chemistry (RP&C) Controls

R1.1 Intake of Radioactive Material During Reactor Water Cleanup (RWCU) System Valve Work

a. Inspection Scope

The inspectors reviewed the events surrounding a recent intake of radioactive material during RWCU valve work. The inspection consisted of interviewing workers involved in the job, a walkdown of the job site and reviewing the ALARA plans, radiation work permits (RWPs) and other relevant documentation.

b. Observations and Findings

On April 15, 1997, a contract valve technician received an intake while performing work on an RWCU primary isolation valve (No. 2-1201-2) in the drywell. The initial whole body count (WBC) indicated an intake of 1872 nCi (primarily cobalt-60), which cleared (via biological elimination) over the next several days until stabilizing at about 142 nCi. Based on the WBC results, the licensee estimated the worker received about 190 mrem committed effective dose equivalent (CEDE). The inspectors independently verified the dose estimate. The licensee concluded that the intake resulted from the failure of the workers to ensure that engineering controls (described below) were used during the job.

The work consisted of measuring the valve components (which had been removed during the dayshift) on second shift in preparation for reassembly of the valve. Decontamination of the valve internals was required in this process. Three contract workers, including a contract RP technician (CRPT) who covered the job, were involved. Based on an air sample taken during the valve breach (which indicated 5.71E-13 uCi/cc), the licensee concluded that respirators were not needed. However, since the valve components were highly contaminated (25,000 to 600,000 dpm (removable); with contact beta dose rates of 6 rad/hr), it was determined that it would be practical to use engineering controls to limit the concentration of radioactive materials in air during the decontamination of the valve internals. Therefore, the RWP required that for decontamination activities, the internals be placed in a glove bag which had a High Efficency Particulate Air (HEPA) filter vacuum system attached. Additionally, the workers wore full protective clothing including faceshields. Average dose rates were 60-80 mrem/hr in the general area and about 250 mrem/hr near the glove box. The workers received a prejob briefing by the CRPT prior to starting work.

During decontamination activities in the glove bag, neither the CRPT nor the valve technician verified that the HEPA vacuum system was operating. After finishing the decontamination activities, the valve technician removed the valve disc assembly from the glove bag and proceeded to verify its fit inside the valve body. The worker sprayed the valve with glycerol and wiped it down to remove residual contamination that could interfere with the fitting. However, this activity was not performed inside the glove bag and was not challenged by the CRPT, who did not

recognize that the RWP specified that decontamination activities be performed inside the glove bag.

The inspectors' independent review agreed with the licensee's determination that problems with this job included a lack of worker familiarity with the controls specified for the job and a poor self-check by the workers prior to and during the job. The CRPT was assigned this job after he had arrived for work on April 15, was not involved in the planning and pre-job evaluation, and had only a cursory familiarization with the ALARA plan and RWP. During the interviews, the workers (including the CRPT) stated that they were uncomfortable with the scope and conduct of the pre-job briefing; however, they did not stop and reverify the information prior to starting work. During work in the glove bag neither the CRPT nor the valve technician verified that the HEPA vacuum system on the glove bag was operating.

There were several other contributing causes to this event, including:

- **Poor turnover to the CRPT covering the work and during the pre-job briefing.** The specific engineering controls used during the job (i.e. the HEPA vacuum) were not communicated during the pre-job briefing. Additionally, the CRPT who covered the valve disassembly had noted on a survey form that the glove bag needed to be moved to a lower dose area. However, this was not communicated to the afternoon shift CRPT and was not done.

- **Poor coverage by the CRPT.** During the job, the valve technician used a rag and glycerol spray to decontaminate the valve disc assembly, outside of the glove bag. The CRPT observed this, but did not recognize that the RWP (no. 972111, Revision 2), specified that work on the disc assembly be performed in the glove bag.

Additionally, the licensee's oversight of contractor activities during this job was weak. The licensee was developing long term corrective actions to address the root and contributing causes. Short term actions included placing an administrative hold on further valve work until all valve crew personnel were briefed on the event, verifying that all RWPs controlling glove bag evolutions listed the appropriate requirements, suspending the radiologically posted area (RPA) access for the CRPT and valve technician, and reenforcing the proper use of ventilation units with workers.

The failure to ensure the operability of the HEPA vacuum unit when the glove bag was used and to perform the decontamination of the valve disc assembly inside the glove bag, were two examples of a violation of 10 CFR 20.1701, which requires that engineering controls (e.g. containment or ventilation) be used, to the extent practical, to control the concentrations of radioactive material in air (VIO 50-254/265-97007-01). This event was similar to those occurring in past outages indicating that the overall planning/control of valve activities was in need of improvement. This was discussed with the license, who planned to review these events, in the aggregate, for generic issues.

c. Conclusions

The licensee's oversight and preparation for work on an RWCU primary isolation valve was ineffective. Specifically, a lack of worker familiarity with the controls specified for the job and a poor self-check by the workers prior to and during the job, resulted in specified engineering controls not being used and a worker's intake of radioactive material. One violation, with two examples, was identified for the failure to use the specified engineering controls. The similarity of this event to other events in previous outages indicates that improvement was needed in the planning and control of valve work.

R1.2 **Contaminated Material Released Offsite**

a. Inspection Scope

The inspectors reviewed the recent release of contaminated material to an offsite scrap metal processor. The inspection consisted of interviewing workers and reviewing the radiological survey results, station procedures and other relevant documentation.

b. Observations and Findings

On February 21, 1997, the Illinois Railway Supply Company (IRSC), a scrap metal processor, notified the licensee that a shipment of scrap metal had alarmed radiation monitors at the North Star Steel Incorporated (NSSI) site (another scrap metal processor). The affected scrap metal came from a railroad boxcar that the licensee had shipped to the IRSC on October 9, 1996. The boxcar was one of two that had been unconditionally released from the site in September 1996, in order to reduce the amount of radioactive material stored in satellite RPAs. On February 20, 1997, the IRSC shipped some of the scrap metal to NSSI. After the licensee was notified of the alarm at NSSI, RP personnel were dispatched to the NSSI and IRSC sites to survey the affected material. Over 70,000 lbs of scrap metal were recovered, with the majority having fixed contamination ranging from 400 to 40,000 dpm. However, the licensee identified one piece of wood and two metal plates which had fixed contamination levels ranging from 300,000 to 500,000 dpm (the plates also had contact radiation levels ranging from 2-3.5 mrem/hr).

The inspectors' independent review agreed with the licensee's conclusion that the root cause was a non-conservative approach to the release of the material. Specifically, the licensee was not aware of the full radiological history of either boxcar and did not perform a thorough survey prior to their release. For example, several of the above contaminated items were internal metal side wall panels covered by plywood sheets that had not been removed during the radiological survey.

Station Procedure No. QCAP 600-01 (Revision 0, dated December 4, 1995), "Control of Materials for Unconditional Release from Radiologically Posted Areas," Step B.10, required that items being unconditionally released have no measurable activity above background as measured using portable radiation detection instrumentation. The failure to follow this procedure is a violation of Technical

Specification (TS) 6.11 which required adherence to RP procedures (VIO 50-254/265-97007-02). In addition to the actions stated above, the licensee suspended the RPT who performed the survey and was reviewing the unconditional release process to ensure it was consistent with industry practice and was well understood by plant personnel.

c. Conclusions

The licensee's oversight and controls over the unconditional release of scrap material to an offsite vendor was ineffective. Specifically, a non-conservative approach to the unconditional release survey resulted in the release of contaminated material to the offsite vendor. One violation was identified for the failure to follow RP procedures regarding the unconditional release of items from the RPA.

R1.3 Review of Outage Radiological Performance

a. Inspection Scope

The inspectors reviewed the licensee's radiological performance during Q2R14. The inspection consisted of interviewing workers, observing ongoing work, and reviewing the ALARA plans, RWPs and other relevant RP documents.

b. Observations and Findings

As of April 21, 1997, with the outage about 80% complete, the station had accrued an annual dose of 400 rem, of which 334 rem was attributed to the outage. The outage activities considered the most radiologically significant included Inservice Inspection (ISI), Emergency Core Cooling System (ECCS) suction strainer modification, Control Rod Drive (CRD) removal/replacement, Unit 2 "A" recirculation (RR) pump motor replacement, turbine component sandblasting, reactor vessel and vessel head flange repairs, and RR pump suction and discharge valve refurbishment.

The ECCS suction strainer, reactor vessel and vessel head flange and RR pump motor and valve work were among several activities resolving outstanding material condition deficiencies that adversely affected plant performance. For example, the RR pump motor and valves have had several past temporary repairs to resolve recurrent leakage problems. During this outage, the licensee replaced the RR pump motor and refurbished the RR pump discharge and suction valves to attempt a final fix to the problem. Overall, about 320 rem was planned for the above material condition improvement initiatives. However, as explained below, the actual exposure for this work was significantly less than estimated.

The licensee's goal for 1997 was 1260 rem, including an estimated 980 rem for Q2R14 work. Unlike previous years, these goals included estimated contributions from contingent and projected emergent work, based on historical trends, resulting in more conservative ALARA planning. For Q2R14, about 250 rem was estimated from contingent and emergent work. The expected contingent work was also included in each specific outage job dose estimate. For example, about 63 rem contingent dose was included in the ISI work for anticipated scope expansion and/or the need to perform weld overlays. This estimate was consistent with the

additional 54 rem accrued during ISI work in the last unit 1 outage (which had a similar original scope). The licensee's control of Q2R14 scope and an absence of significant emergent work (12 rem as of April 25) has resulted in actual outage dose being significantly below the expected goal.

Good use of ALARA controls and source term reduction efforts also contributed to the low dose total. Some examples of ALARA controls observed by the inspectors included the use of: mockups for scaffold/shielding activities, RR motor pump work, and CRD work; cameras and teledosimetry during installation of the RR pump motor and undervessel work; a robotic cleaning system for the reactor vessel and vessel head flange work; and special tooling (based on Unit 1 outage lessons learned) during CRD and RR valve work. In particular, the CRD work (comprising 29 drives and 2 thermal sleeves) was completed for about 1 rem compared to the goal of 3.5 rem, even though working area dose rates were comparable to historical averages. The difference was primarily attributed to tools the station developed which significantly decreased the disassembly time for the drives.

Regarding source term reduction, the licensee performed a chemical decontamination of the RR suction and discharge piping and continued to hydrolaze high dose rate piping. Although the chemical decontamination results were still being evaluated by the licensee, an average dose rate reduction factor between 3-6 was seen in the hydrolazed piping. The licensee focused hydrolazing on those areas that significantly contributed to worker dose such as the CRD scram discharge and sink drain lines, the south vertical floor drain, reactor building and drywell equipment drain headers, and the RHR heat exchanger piping. Other significant actions included the installation of 29 low cobalt containing CRDs and a depleted zinc injection system in Unit 2. These activities were part of an ongoing licensee initiative to replace all the CRDs with low cobalt components and install a depleted zinc injection system in both units.

The inspectors also noted several efforts by the licensee to address historical outage problems. For example, poor control and guidance for RWCU operation during reactor cavity floodup resulted in water clarity issues and higher dose rates on the refuel floor in past outages. For Q2R14, a requirement was placed in the outage water movement plan to continue running the RWCU until good water clarity was achieved and chemistry personnel verified that the radioactivity concentration was below 0.05 uCi/ml. The inspectors verified that both criteria had been met and observed no problems with either water clarity or refuel floor dose rates during Q2R14. Another long standing issue was high dose rates observed on the RHR shutdown cooling system from entrained corrosion material in the piping and in the bottom of the reactor vessel. Previous attempts to remove this material (via chemical decontamination and hydrolazing) were unsuccessful owing to the inability to reach the lower sections of the vessel and the RHR piping. In Q2R14 using a different hydrolazing configuration, the licensee removed most of the corrosion material in the reactor vessel bottom. Although this did not significantly affect dose rates, the licensee believed that flow through the vessel bottom would improve thereby reducing the accumulation of corrosion products. The licensee was evaluating methods to remove the remaining corrosion products in the RHR lines.

The inspectors noted that the licensee continued to have problems with identifying scaffold needs prior to the outage, with engineering support for lead shielding activities and with work groups not providing accurate man-hour estimates to RP for ALARA planning. For example, in both Q2R14 and the last Unit 1 outage, between 200-250 unplanned scaffolding requests were added to the scope. Additionally, the increased demand for engineering resources to address material condition issues have resulted in RP shielding requests not being processed in a timely manner. These problems have not significantly impacted outage performance, as workers have developed informal mechanisms to resolve them. For example, the RP staff developed an informal rule of dividing provided man-hour estimates by a factor of 3 to obtain a more accurate estimation of total time needed to be spent in radiological areas. The licensee was aware of these issues and planned to develop corrective actions.

c. Conclusions

Overall, the radiological controls for the outage were good. Of particular note was the licensee's effort to incorporate contingent and emergent work estimates, based on historical performance, into the ALARA planning process. Additionally, the licensee continued to implement good ALARA controls and source term reduction initiatives and made progress in resolving ongoing issues from previous outages. However, recurrent problems were noted with identifying scaffold needs prior to the outage, with engineering support for lead shielding activities and with work groups not providing accurate man-hour estimates to RP for ALARA planning.

R1.4 Review of Radiological Performance For Routine Activities (Outage and Non-Outage)

a. Inspection Scope

The inspectors reviewed the licensee's radiological performance for selected routine activities during both non-outage and outage time periods. The inspection consisted of reviewing historical dose data, interviewing workers and observing ongoing work. The specific activities reviewed included routine operator and firewatch rounds, station laborer decontamination activities in high radiation areas (HRAs) and minor instrument maintenance (IM) work in HRAs.

b. Observations and Findings

With the exception of the station laborer activities, a general decrease was seen in the work exposure totals since 1994. A specific breakdown of the dose (in rem) for each activity (non-outage and outage combined) per year is documented in the following table (for 1997, the dose was as of April 21):

Activity	1994	1995	1996	1997
Operator rounds	37.1	27.1	26.6	7.9
Firewatch rounds	14.8	14.7	12.7	4.0
IM work	15.3	10.1	8.7	1.9
Station Laborers	21.0	26.6	32.4	7.5

The station laborer dose trend reflected an increased station effort to reduce the amount of contaminated area in order to facilitate work (such as operator rounds). Discussions with RP personnel identified several improvement efforts taken by the work groups to decrease station dose. For example, the inspectors observed operators using cameras to verify the operability of equipment located in high dose areas and both operations and firewatch personnel using good ALARA techniques (i.e. minimizing time, maximizing available shielding, etc). Additionally, the workers described several initiatives being taken to further dose reduction efforts. For example, both the operations and firewatch departments were working with RP personnel to develop low dose plant walkdown routes, and the station laborer group was evaluating the recontamination rate for certain plant areas and developing a more realistic goal for plant contaminated area in order to reduce time spent in HRAs.

c. Conclusions

Total exposure for routine operator and firewatch rounds and for IM work decreased owing to station ALARA efforts. However, station laborer dose increased owing to station decontamination efforts.

R1.5 Contaminated Oil Found in Waste Water Treatment Plant (WWTP)

On March 25, 1997, during a routine walkdown, a station operator and chemistry technician observed oil in the WWTP flocculation/clarifier tank. After identification, the oil was concentrated and removed by a belt skimmer to the WWTP oil skimmer holding tank. Samples were collected of the oil in the holding tank and of the waste water at the WWTP effluent point. A gamma isotopic of both samples identified about 4.2E-7 uCi/ml of cobalt-60 in the holding tank oil (above the environmental lower limit of detection (LLD) value of 1.5e-8 uCi/ml) and no activity above the environmental LLD in the effluent. A second sampling (both locations) was performed on March 26; neither sample had activity above the environmental LLD.

The contamination resulted from an oil seal leak on the centrifuge used to clean turbine lube oil sent to the Dirty Oil Tank. Historically, contamination has been observed in the turbine lube oil owing to past cross contamination events involving the Units 1 and 2 oil separator. After discovery, the oil seal was immediately repaired by the licensee.

The WWTP effluent release point was sampled monthly by the licensee and has never seen activity via this pathway. Additionally, the WWTP discharged into the normal liquid radwaste discharge point which was continuously monitored and sampled. The inspectors reviewed the licensee's handling of this event and identified no problems. This event will be documented in the next annual effluent report.

R4 Staff Knowledge and Performance in RP&C

R4.1 Review of Outage Radworker Performance and Work Controls

a. Inspection Scope

The inspectors reviewed outage radworker performance and work controls by reviewing work packages and similar relevant documentation, interviewing workers, attending job planning meetings and observing work activities. During the walkdowns, the inspectors questioned workers and RPTs regarding those expectations stated in the licensee's "Radiation Worker Handbook" (issued August 1996) and "RP, Chemistry and Station Labor "Expectations and Standards Handbook" (dated 1996), respectively.

b. Observations and Findings

During walkdowns of the Units 1 and 2 reactor (including ECCS rooms) and turbine buildings, the inspectors observed good radworker practices including use of low dose areas, frequent checking of electronic dosimetry (EDs), proper use of personal contamination monitoring (PCM) equipment, and proper wearing of protective clothing. Workers were familiar with the "Radiation Worker Handbook" requirements, but were confused regarding how to correctly move material in or out of a contaminated area and who (RP or the workers) was responsible for ensuring the operability of engineering controls. This was discussed with licensee management who planned to develop corrective actions.

While observing work in the Unit 2 high pressure coolant injection (HPCI) room (a posted contaminated area), the inspectors noted that a worker, in full PCs, was not wearing a protective hood or hard-hat. Since other workers in the area were wearing these items, the inspector questioned this worker on the RWP (No. 973042, Revision 1) requirements for PCs. The worker stated that he did not know the exact requirements, but believed that the use of a hood or hard hat was optional. The inspectors verified that the worker was correct and identified several other RWPs which contained requirements that were optional on the part of the worker. The inspectors were concerned that the use of optional requirements would result in workers making non-conservative decisions in order to increase productivity. Licensee management agreed with the inspectors and planned to review the RWP process.

The inspectors observed good performance and controls by RPTs. For example, at the drywell and refueling floor control points, the inspectors observed the RPTs removing unnecessary personnel and providing good coordination between work groups. Additionally, following the resumption of RWCU valve work (see Section R1.1), the inspectors observed an RPT provide an effective prejob briefing for ongoing valve work. Based on the interview results, the inspectors concluded that the RPTs were familiar with the "RP, Chemistry and Station Labor Expectations and Standards Handbook" requirements.

The inspectors attended several daily planning meetings, including shift, maintenance and operations department turnover briefings, station outage

meetings, and a monthly ALARA committee meeting. Radiological concerns were appropriately addressed and good communication between work groups was observed.

c. Conclusions

Workers were generally familiar with management expectations and RPTs were observed using good controls during work activities. However, some problems were identified regarding the understanding of requirements for control of contaminated areas and use of engineering controls and one weakness was identified with the use of optional controls in RWPs.

R8 **Miscellaneous RP&C Issues**

The following items identified in previous inspection reports were reviewed by the inspectors:

(Closed) Violation 50-254/265-93030-05: Failure to survey a vehicle before releasing. The licensee discussed the event with the appropriate station personnel and revised station Procedure No. QCAP 650-04, "Disposition of Radioactive Material Shipment Vehicles" to contain more explicit guidance for performing vehicle surveys. The inspectors reviewed the revised procedure and noted that since this event, the licensee's performance in this area has been good. This item is closed.

(Closed) IFI 50-254/265-96004-10: Station task force efforts to address poor radiation worker practices. Since corrective actions were initiated in 1995, the licensee has observed a decrease in the number of radworker performance events. This was consistent with observations made during routine NRC inspections. Based on the performance trend, this item is considered closed.

X1 **Exit Meeting Summary**

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on April 25, 1997. The licensee acknowledged the findings presented and did not identify any of the documents listed as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

D. Cook, Operations Manager
W. Lipscomb, Work Control Superintendent
L. W. Pierce, Station Manager
G. Powell, Radiation Protection Manager
W. Schmidt, ALARA Supervisor
R. G. Svaleson, RP/Chemistry Superintendent
M. B. Wayland, Maintenance Manager

INSPECTION PROCEDURE USED

IP 83750	OCCUPATIONAL RADIATION EXPOSURE
IP 84750	REACTOR WATER CHEMISTRY AND GASEOUS AND LIQUID EFFLUENT RELEASE PROGRAM

ITEMS OPENED AND CLOSED

OPEN

50-254/265-97007-01	VIO	Failure to use engineering controls (Section R1.1)
50-254/265-97007-02	VIO	Failure to follow RP procedures (Section R1.2)

CLOSED

50-254/265-93030-05	VIO	Failure to survey a vehicle (Section R8)
50-254/265-96004-10	IFI	Radiation worker performance task force results (Section R8)

LIST OF DOCUMENTS REVIEWED

NRC Information Notice No. 88-63 (dated 8/15/88) including Supplement Nos. 1-3

Q2R14 Pre-Outage ALARA Report

Unit 2 "A" Recirculation Pump Internals Project ALARA Plan (dated 2/10/97)

Level 2 PIF (No. 97-0490) Investigation Report, "Radioactive Material was Released From Quad Cities Station Due to unconditional Release Standard Deficiencies and Ineffective Risk Assessment of the Potential Risks Involved"

Licensee investigation report (dated 4/21/97) for the 4/15/97 radioactive intake that occurred during RWCU valve work

"ComEd Radiation Worker Handbook," Revision 0, dated August 1996

"Quad Cities Radiation Protection, Chemistry and Station Labor Expectations and Standards Handbook," dated 1996

Station Procedure Nos.

QCAP 600-08, Revision 0, "ALARA Program"
QCRP 6020-03, Revision 4, "Radiological Surveys"
QCAP 600-01, Revision 0, "Control of Materials for Unconditional Release for Radiological Posted Areas"
QCMM 1515-17, Revision 0, "Pressure Seal Gate Valve Maintenance"
QCRP 6200-05, Revision 6, "Writing Radiation Work Permits"
QCAP 640-4, Revision 3, "Installation and Use of Contamination Control Devices"
QCAP 600-06, Revision 6, "Radiation Work Permit Program"
QCRP 6020-02, Revision 7, "Airborne Radioactivity Sampling and Analysis"
QCRP 6210-15, Revision 3, "Issuance & Inspection of Contamination Containment Devices"
PCFHP 400-10, Revision 2, "Replacing or Relocating LPRMs or Dry Tubes"
QCAP 650-04, Revision 2, "Disposition of Radioactive Material Shipment Vehicles"

Radiation Work Permits (RWPs) Nos.

973093, Revision 1, "Unit 2 Main Turbine Overhaul"
973094, Revision 4, "Unit 2 Main Turbine Sandblasting Activities"
973067, Revision 1, "Reactor Head and Reactor Vessel Flange Repairs"
972101, Revision 2, "2-0202-4A/5A: Replace Stem/Repair/Repack/Test Valves"
972102, Revision 2, "2-0202-4B/5B: Replace Stem/Repair/Repack/Test Valves"
972060, Revision 0, "Unit 2 "A" Recirculation Motor Removal"
972061, Revision 0, "Unit 2 "A" Recirculation Pump: Furmanite Clamp & Pump Internals Work"
972062, Revision 1, "Unit 2 "A" Recirculation Pump: Repair Flange Face"
972111, Revision 2, "2-1201-2 Inboard Isolation: Disassemble/Inspect/Repair"

972031, Revision 2, "ECCS MOD: Unit 2 DW Asbestos Insulation Abatement"
973065, Revision 0, "ECCS: Suction Strainer Replacement Mod (Support Activities"
973066, Revision 1, "Unit 2 Torus Diving Activities"
973064, Revision 0, "Unit 2 ECCS Suction Strainer Mod: RB Basement Support Activities"
972011, Revision 0, "Control Rod Drives: Remove/Replace/Transfer"
961053, Revision 2, "Weld Overlays: Repair listed welds"
972023, Revision 2, "ISI: Drywell Insulation Support"
972024, Revision 0, "ISI: Drywell Scaffold Support"
972025, Revision 0, "ISI: Drywell Listed Inspections"
973119, Revision 1, "ISI: Insulation Repair/Decon/Staging on Unit 1 RB 666"
973118, Revision 0, "ISI: Prep/Inspect Unit 2 Reactor Vessel Head Welds"
972016, Revision 0, "Unit 2 DW Replace Dry Tubes: IRM 11-14 and SRM 21-22"