



Illinois Emergency Management Agency  
Division of Nuclear Safety

Pat Quinn, Governor  
Andrew Velasquez III, Director  
Joseph G. Klinger, Assistant Director

September 30, 2009

United States Nuclear Regulatory Commission - Region III  
Quad Cities Nuclear Station  
22710 206<sup>th</sup> Avenue North  
Cordova, IL 61242

Attention: Mr. James McGhee

SUBJECT: IEMA – Bureau of Nuclear Facility Safety, Inspection Report  
Quarterly Inspection Period: July 1 to September 30, 2009

Dear: Mr. McGhee,

On September 30, 2009 the Illinois Emergency Management Agency-Bureau of Nuclear Facility Safety Resident Inspector completed the quarterly inspection activities at the Quad Cities Nuclear Station, Units 1 and 2. Per the terms and conditions of the Memorandum of Understanding (MOU) between the NRC and IEMA-BNFS, the enclosed inspection report documents our agency’s inspection issues and concerns that were previously discussed with you and members of your resident inspection staff.

The IEMA-BNFS inspection activities were conducted as they relate to nuclear safety and to compliance with the Commission’s rules and regulations and with the conditions of the plant license. The inspector(s) reviewed selected licensee procedures and records, observed licensee activities, and interviewed licensee personnel.

Specifically, the inspection activities for this period focused on those inspection modules that were proposed to your NRC inspection staff as identified in the Fourth Quarter IEMA Inspection Plan and are disseminated within the text of the attached IEMA-BNFS Inspection Report.

Based on the results of this inspection, the inspectors identified the following IEMA-BNFS Open / Follow-up Items and are discussed within their respective report reference ( ):



H-79



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1. The inspector will continue to follow the issue with cable tray covers until the design documents are issued. (1R04)

Any issues, open items and/or concerns that are discovered during the course the inspection period are normally entered into the IEMA – Bureau of Nuclear Facility Safety Plant Issues Matrix, and by this letter, are considered as disseminated to your NRC staff for disposition in accordance with NRC policies and procedures. In full cooperation with the and at the request of the NRC, IEMA-BNFS will continue to follow and assist the NRC Resident Inspection Staff with resolution and closure of all such issues, open items and/or concerns.

In full cooperation with and at the request of the NRC, IEMA-BNFS will continue to follow and assist the NRC Resident Inspection Staff with resolution and closure of all such issues and concerns.

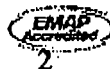
If you have any questions, please contact me at your earliest convenience.

Sincerely yours,

Richard J. Zuffa  
IEMA-BNFS/RI Unit Supervisor  
Resident Inspection Staff

Docket Nos. 50-254; 50-265  
License Nos. DPR-29; DPR-30  
Enclosure(s): Inspection Report: 09QC-3QIR  
cc w/o encl: A.C. Settles, Chief Division of RICC  
C.H. Mathews, IEMA-BNFS-RI

Please visit the nuclear safety section of the Agency's website at [www.iema.illinois.gov/iema/dns.asp](http://www.iema.illinois.gov/iema/dns.asp) for the latest information concerning the Division of Nuclear Safety's programs. Our website includes important information such as new and proposed requirements, guidance, events and other pertinent items of interest.



**IEMA INSPECTION REPORT SUMMARY  
09QC-3QIR**

STATION: Quad Cities	UNIT 1 – DOCKET NO: 50-254 UNIT 2 – DOCKET NO: 50-265
IEMA INSPECTORS:	Charlie Mathews
INSPECTION PERIOD:	July 1 through September 30, 2009
NRC REPORT NUMBER:	2009-004
INSPECTION HOURS:	120
SUBMITTED TO NRC ON:	September 30, 2009
INSPECTION SUBJECT:	Safety Inspection of the Quad Cities Nuclear Power Station
VIOLATIONS:	None
OPEN ITEMS:	None
UNRESOLVED ITEMS:	One
	1. The inspector will continue to follow the issue with cable tray covers until the documented documents are issued. <b>(1R04)</b>
ITEMS CLOSED:	None

**Report Details**

**Plant Status**

On June 26, 2009 the licensee issued Licensee Event Report (LER) 254/09-001, "Magnesium Rotor Degradation Causes Failure of Unit 1 Reactor Recirculation Pump Discharge Motor Operated Valve to Close and Results in Loss of Low Pressure Core Injection (LPCI) when in Loop Select Function. This LER was the result of testing conducted on April 28, 2009 during the Unit 1 Refueling Outage (Q1R20).

Beginning July 13, the site began the 2009 campaign to move spent fuel to dry cask storage. A total of 8 casks with 64 fuel bundles in each cask are to be completed. As of September 14, four dry casks have been completed.

### Unit 1

Unit 1 operated the entire inspection period at near full rated electrical output of 920 MWe, until September 8, when the unit was taken offline due to a pin-hole leak on the 1B Core Spray minimum flow line. The pin-hole leak rendered the primary containment inoperable because it created an unisolable leakage path from the Unit 1 Torus. Following repairs, the unit was returned to service on September 12 at 0822.

### Unit 2

Unit 2 operated the entire inspection period at near full rated electrical output of 945 MWe.

## **1. REACTOR SAFETY**

Initiating Events, Mitigating Systems, Barrier Integrity

### **1R01 Adverse Weather (71111.01)**

#### **a. Inspection Scope**

The inspection focus was to verify that the plant design features and implementation of the licensee's procedures protect mitigating systems from adverse weather effects. Prior to adverse weather onsite, the inspector verified that mitigating strategies were in place and verified that the site response was as directed by their procedures.

#### **b. Observations and Findings**

On August 19 with severe weather approaching, the inspector toured outside areas of the plant referencing QCOA 0010-10 rev 21, TORNADO WATCH / WARNING, SEVERE THUNDERSTORM WARNING, OR SEVERE WINDS, to verify that the licensee took the necessary pre-emptive actions to preclude loose objects from becoming potential missiles during high winds. No issues were identified.

#### **c. Conclusions**

There were no significant issues identified during this inspection activity.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspector performed equipment configuration alignment and general area inspections in the following plant areas:

- Main Control Room and Back Panel Areas
- Unit 1&2 Reactor Feed Water Pump Rooms
- Unit 1&2 4 KV Buses (safety and non-safety)
- Unit 1&2 High Pressure Coolant Injection (HPCI) Rooms
- Unit 1&2 Reactor Building Corner Pump Rooms
- Shutdown Makeup pump (SSMP) Room
- Unit 1&2 and Unit ½ Emergency Diesel Generator (EDG) Rooms
- Refuel Floor
- Turbine Building

b. Observations and Findings

During walk down inspections of plant equipment areas, the inspector verified equipment configuration and inspected equipment areas for any material condition deficiencies that could prevent proper equipment operation. Equipment areas were inspected for system leakage, personnel safety hazards, potential interference with system components and controls, fire hazards, water intrusion, and the integrity of system structural supports. The inspector monitored equipment areas for abnormal vibration, odors, sounds, or other conditions that could impact proper equipment operation and plant safety.

On July 16, with the pump secured, the inspector identified low oil level on the 2A Core Spray pump lower motor bearing. Oil was approximately 3/8" below the standstill oil level and only ¼" above the minimum operating range oil level. The inspector reported this to the shift manager who verified the low level and had oil added. The inspector talked to the system engineer who determined that there was no impact on the pump motor. No IR was initiated as oil addition is tracked in the Oil Addition Tracking Database which is monitored by the engineering. If oil addition were significant, then an IR would have been generated.

On July 20, the inspector toured the turbine building and found four "locked" valves (1-0301-174, 3A, 175, and 3B) on the Unit 1 control rod drive (CRD) pump system, that by observation only, had enough extra chain on the valves that they could be fully opened or closed without removing the lock and chain. The inspector checked the Unit 2 CRD pumps and identified, by observation only, that one valve (2-0301-164B) could be repositioned approximately 1.5 turns without removing the lock and chain. The inspector reviewed OP-AA-108-103, rev 2, "Locked Equipment Program" to determine the site requirements and found that the locked equipment program is not designed to prevent an individual from repositioning a valve, "Locks should alert plant personnel of the importance of the component and remind personnel special controls over repositioning are to be maintained". There was no issue as result of this observation.

On August 12, the inspector while touring the power block identified that nuts were missing from 4 of 8 hold-down bolts for a pipe support on the Unit 1 diesel generator cooling water system. Engineering determined that the base plate for support, M-998D-59, holding pipe 1-3953-6, had previously been enlarged and the inner 4 nuts removed. The outside 4 nuts were the only ones required.

On August 13, the inspector observed the control room operators manually start the 1A and 1D Residual Heat Removal (RHR) pumps for torus cooling. There were no issues with this observation.

On August 13, the inspector toured the reactor building with the IEMA resident inspector supervisor and the supervisor identified that instrument cable trays in the Unit 1 and 2 reactor buildings did not have the required tray covers on per drawings 4E1033, 4E-1034, and 4E-2033, see IR 953236. Further investigation by the inspector determined that these cable trays had been previously identified by Illinois Emergency Management Agency personnel September 18, 2003.

Investigation into IR 953236 by site engineering and verified by the inspector revealed that no Reactor Protection System (RPS) cables were routed through these cable trays and therefore the cable trays were not required to have cable tray covers per the Updated Safety Analysis Report (UFSAR). An additional incident report, IR 954251, was initiated by the licensee to document and investigate why corrective action from 2003 to replace the cable tray covers had not been completed. While investigation in 2009 determined that the cable tray covers were not required by the UFSAR, this investigation was not performed in 2003 and timely corrective action did not occur. Lastly even though the UFSAR does not require the

installation of cable tray covers, the above listed design drawings do show covers in place so currently the plant does not match their design documents.

c. Conclusions

There were no significant issues identified during this inspection activity. Failure to perform a timely corrective action associated with the cable tray covers is being bundled with other lack of timely corrective actions by the NRC Senior Resident inspector. The inspector will continue to follow the issue with cable tray covers until the design documents are issued. This is considered an inspector Open Item [09QC-3QIR-001].

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspector evaluated the licensee's fire protection program for operational status, and material condition and verified the adequacy of:

- Controls for combustibles and ignition sources within the plant
- Fire detection and suppression capability
- Material condition of passive fire protection features

b. Observations and Findings

The inspector performed regular tours of the Quad Cities power block over the quarter and while on tour, verified compliance with the licensee's fire protection program per procedures OP-AA-201-004 rev 8, Fire Prevention for Hot Work, and OP-AA-201-009 rev 8, Control of Transient Combustible Material.

c. Conclusions

There were no significant issues identified during this inspection activity.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspector reviewed the latest safety related heat exchanger (directly connected to the ultimate heat sink (UHS)) performance surveillance to

verify heat exchanger performance and to identify any potential heat exchanger deficiencies which could mask degraded performance.

b. Observations and Findings

On September 3, the inspector reviewed the completed 2B RHR heat exchanger performance surveillance QCOS 1000-29 rev 12, RHR Heat Exchanger Thermal Performance Test, performed February and March of 2009. The inspector reviewed the test results and no deficiencies were identified

c. Conclusions

There were no significant issues identified during this inspection activity.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

The inspector observed a licensed operator training exam in the control room simulator to verify that the facility licensee's requalification program for licensed reactor operators (ROs) and senior reactor operators (SROs) ensured safe power plant operation by adequately evaluating how well the individual operators and crews mastered the training objectives, including training on high-risk operator actions. Performance of the utility evaluators was also evaluated by the inspector to verify that they identified all appropriate training issues and enhancements.

b. Observations and Findings

On August 10, the inspector observed the simulator examination of Crew A, Group 1. The exam scenario involved a loss of reactor coolant leakage that was designed to eventually lead the operating crew to depressurize the reactor. Following reactor depressurization, the operating crew should re-flood the reactor with low pressure systems as per emergency operating procedures. The crew successfully handled the scenario. The inspector did not identify any issues with the operating crew or with the evaluation of crew performance.

c. Conclusions

There were no significant issues identified during this inspection activity.



1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspector evaluated the licensee Maintenance Rule (MR) Program to verify that Structures, Systems, and Component (SSC) performance or condition problems were identified and corrected.

b. Observations and Findings

Prompted by condition reports on failed core spray system components, the inspector performed a MR inspection of the core spray system to verify that component failures were properly addressed by the program.

On September 3, the inspector performed a search and review of any IRs that were initiated on the core spray system looking back over a period of two years. From this search, 231 Core Spray related IRs were initially identified and categorized. From that list, 15 IRs were identified involving component failures, with six IRs selected for detailed study. Based upon this review the inspector was satisfied that the issues for the core spray system were being identified with the resolution of those issues completed in a timely manner.

The inspector reviewed the “allowable out of service” hours and determined that core spray is a system with a low impact on the plant risk, and had roughly 2.5% out allowed of service time. This out of service time was based upon the less than 5% out of service time criteria specified by the NRC when the Maintenance Rule was established. The inspector then checked the PRA unavailability time to verify that the PRA was calculating plant risk based upon the Maintenance Rule acceptance criteria. The inspector found that the PRA assumed that the unavailability time for core spray was 50 hours per train per year. This differed from the Maintenance Rule acceptance criteria of 433 hours per train per 24 months. The inspector questioned the Maintenance Rule coordinator and the site PRA analysis and was informed that normally the two numbers agree, but in this case the unavailability hours have no impact on the overall PRA result. The PRA analysis wrote IR 969989 to document the differences and explain why no revision to the PRA or Maintenance Rule was needed. The inspector reviewed the IR and concurs with the site conclusion.

c. Conclusions

There were no significant issues identified during this inspection activity.

1R13 Maintenance Risk Assessment & Emergent Work Evaluation (71111.13)

a. Inspection Scope

The inspector monitored the licensee's on-line risk assessment on a continual basis.

b. Observations and Findings

The inspector monitored the on-duty shift activities concerning risk assessment practices during scheduled plant maintenance and emergent work activities. The on-shift supervisors updated the on-line risk assessments to their appropriate levels when plant conditions warranted and it was their practice to consult the Station Risk Coordinator in the event they encountered an equipment configuration not previously evaluated.

On August 31, the ½ Diesel Generator (DG) was out of service for scheduled maintenance. The inspector walked down two of the protected equipment systems, the 1B and 2B RHR Heat Exchangers referencing procedure QCOP 1000-02, rev. 24 "RHR System Preparation for Standby Operation" as guidance. The inspector verified, without entering contaminated areas, that these two systems were aligned to standby status per that procedure.

c. Conclusions

There were no significant issues identified during this inspection activity.

1R15 Operability Evaluation (71111.15)

a. Inspection Scope

The inspector reviewed operability evaluation for use of Holtec multi-propose canisters (MPC) that were manufactured without the NRC required non-destructive examination (NDE).

b. Observations and Findings

The inspector reviewed EC 376550 supporting Operability Evaluation 950556 to allow the licensee's use of Holtec multi-propose canisters that

were manufactured without the required NDE. The inspector reviewed Nuclear Regulatory Commission (NRC) Interim Staff Guidance (ISG) 18 rev 1, Division of Spent Fuel Storage; and Transportation and ISG-15, Materials Evaluation. The inspector discussed with the NRC Senior Resident inspector how the American Society of Mechanical Engineers (ASME) pressure vessel code combined with ISG-15 and ISG-18 rev 1, supported the operability evaluation.

No issues or comments were generated.

c. Conclusions

There were no significant issues identified during this inspection activity.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspector verified that post-maintenance test procedures and test activities were adequate to verify system operability, and functional capability.

b. Observations and Findings

Over the inspection period, the inspector reviewed completed Post Maintenance Test (PMT) procedures to verify that repaired systems were made operable. The inspector reviewed the following PMT:

- For the B train of Standby Gas Treatment System; QCOS 0005-04 Rev 17, IST Valve Position Indication Surveillance.

Due to summer readiness requirements, little work was performed on site that would result in the need to perform post maintenance testing.

c. Conclusions

There were no significant issues identified during this inspection activity.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspector verified that surveillance testing of risk-significant structures, systems, and components demonstrated that the equipment was capable of performing its intended safety function.

b. Observations and Findings

Over the inspection period, the inspector reviewed completed surveillance procedures to verify that system operability was met. When IRs were initiated, the inspector verified that the IR condition did not prevent the system from remaining operable. The following surveillance procedures were reviewed:

- QCOS 0300-18 rev 7, CRD Accumulator Pressure Check Test
- QCOS 0300-01 rev 39, CRD Exercise
- QCOS 1600-01 rev 17, Torus to Drywell Vacuum Breaker Exercise
- QCOS 6600-41 rev 33, Unit 1 Emergency Diesel Generator Load Test
- QCOS 0300-21 rev 5, CRD Temperature Surveillance

The results of the surveillance tests were considered satisfactory by the inspector.

c. Conclusions

There were no significant issues identified during this inspection activity.

1EP6 Drill Evaluation) (71114.06)

a. Inspection Scope

The inspector evaluated the drill performance of the Technical Support Center (TSC) and participated in a utility only annual emergency drill from the TSC.

b. Observations and Findings

On July 23, the inspector performed a quarterly inspection of a Technical Support Center (TSC) Performance Indicator (PI) drill per IP 71114.06, Drill Evaluation. The drill began with a call (simulated) from the NRC that there was a credible site-specific security threat to the site. This notification resulted in an Unusual Event emergency action level (EAL) based on HU1. At 0855, hydrogen build-up in the Unit 1 battery room resulted in declaration of alert EAL classification HA7. At 0950, an

anticipated transient without scram (ATWS) occurred, requiring the operators to enter emergency procedures to shutdown the reactor and enter into a Site Area Emergency per MS3. Later, when conditions warranted, it took 14.5 minutes for the TSC to make the call of FG1, to declare a General Emergency.

The inspector had several issues with actions in the TSC, which were all covered in the post drill brief and are summarized below:

- No discussion of concurrent EALs.
- Problems with the Operating Support Center (OSC) team tracking screen needs training to resolve.
- There were 6 overhead screens that were not turned on when TSC was activated. By 0920, 2 were turned on, and by 0930, 2 more were turned on.

On September 16, the licensee performed a non-graded annual drill. The inspector was a participant in this drill. Overall the drill went well. The site drill participants were the same TSC crew observed by the inspector July 23. Performance of this crew was much improved.

c. Conclusions

There were no significant issues identified during this inspection activity.

**2. RADIATION SAFETY**

2OS OCCUPATIONAL RADIATION SAFETY

2OS1 Access Control to Radiological Significant Areas (IP 71121.01 & MC 2515D)

a. Inspection Scope

The inspector conducted walk downs of radiologically controlled areas to verify the adequacy of radiological area boundaries, postings, radiological housekeeping and contamination controls.

b. Findings and Observations

During plant walk downs, the inspector looked for proper radiological controls, including postings, roped off areas, and contamination controls.

The inspector verified that these controls were appropriate and were satisfactorily implemented.

c. Conclusions

There were no apparent degraded conditions associated with this inspection activity.

2PS Public Radiation Safety

2PS1 Environmental Monitoring Program and Radioactive Material Control Program (2515A, 71122.01)

a. Inspection Scope

The inspector reviewed the results from the last set of 54 Tritium well samples and reviewed IRs to ensure that no abnormal radioactive gaseous or liquid discharges occurred and that conditions were properly monitored.

b. Observations and Findings

On September 15, the inspector received the latest well sample results from the 54 Tritium sample wells. The samples were taken the end of August and early September. The groundwater sampling program monitors the existing tritium plume (from previous sub-surface piping leaks that were identified and repaired) as it traverses the owner controlled area and provides early warning of new radioactive leakage. The site minimum detectable level of Tritium is 200 PicoCuries per liter (pCi/L). From evaluation of the latest well sample data, the inspector continues to believe that Tritium activity is decreasing overall, with the plume moving to the southwest as expected.

The inspector investigated an issue with the main chimney flow calibration that could impact Protective Action Recommendations (PARS). Because of a scaling issue with control room recorder 0-5740-109, the calibration of the flow transmitter for the main chimney stack flow was adjusted to make the recorder read closer to flow as sensed by the stack flow transmitter. This calibration adjustment caused computer point R124 to read incorrectly, primarily in the low flow regions. Investigation as documented by IR 949983 revealed that the issue and the transmitter calibration were corrected, and the scaling factor on computer point R124 was set correctly.

Emergency Preparedness personnel were then directed to use the computer point for main chimney stack flow during emergency conditions instead of

the control room recorder. Using the computer point instead of the recorder was the opposite of what site Emergency Preparedness personnel had been taught in the past. The inspector verified that using the computer point would result in the best flow data for PARS recommendations.

c. Conclusions

The inspector will continue to follow the tritium sample results. There were no issues of significance identified during this inspection activity.

2PS3 Environmental Monitoring Program (REMP) and Radioactive Material Control Program (71122.03)

a. Inspection Scope

The inspector performed a verification of the Radiological Environmental Monitoring Program (REMP) analyses with respect to its impact of radioactive effluent releases to the environment. The inspection was performed to validate the integrity of the radioactive gaseous and liquid effluent release program and to ensure that the licensee's surveys and controls were adequate to prevent the inadvertent release of uncontrolled radioactive contaminants into the public domain.

b. Observations and Findings

On November 18<sup>th</sup>, the Illinois Environmental Protection Agency (IEPA) visited the Quad Cities Station for their quarterly joint inspection with IEMA. From the latest well sample data, the inspector believes that Tritium activity continues to decrease overall, with the plume moving to the southwest as expected.

One change to expected Tritium levels resulted from operation of the "Big Fish" well that drew water from the area of the former RHR pipeline leak plume toward well 105i. Well 105i is located north of the "Big Fish" well and south of the old RHR pipeline leak. From August 19 through September 3, 2009, the 1800 gpm "Big Fish" well operated 24 hours/day pumping approximately  $39E^6$  gallons of groundwater into the former cooling water spray canal that is now used as a Walleye fish hatchery. This pumping occurred to drive the Walleye downstream in the canal to a collection point for stocking into the river. The "Big Fish" well was

sampled weekly and Tritium results were at, or near, the LDL of 200 pCi/L (246 pCi/L the first week and < 200 pCi/L the second).

A review of the licensee's IRs for the quarter regarding facility tritium activity and REMP sampling issues contained nothing noteworthy.

c. Conclusions

There were no significant issues identified during this inspection activity.

**4 ALL Cornerstones**

4OA2 Identification and Resolution of Problems (71152)

a. Inspection Scope

The inspector reviewed corrective action documents to determine the licensee's compliance with NRC regulations regarding corrective action programs.

b. Observations and Findings

The inspector reviewed every Issue Report (IR) initiated during the quarter to assess whether the site was properly identifying issues.

The inspector reviewed a sample of Apparent Cause Report (ACE) documents:

- IR 947207; Hydrogen Addition System Lost to Both units
- IR 935674; Follow-up to Failure of motor operated valve 1-0202-5B to Stroke on Demand
- IR 933472; Service Water Effluent Rad Monitor Inoperable,
- IR 946450; Work Scope Outside of C/O Boundary U2 DW Pneumatic Compressor
- IR 872127; Assumptions Regarding Environmental Qualification Requirements Results in System Operation Outside of Qualified Conditions
- IR 931150-06; 2A Jacket Water Booster Pump Breaker Thermals Found Tripped
- IR 929798; Design Flaws for Automated TIP Control Units Identified Late in Design Process



- IR 923468; RCIC Turbine Exhaust Check Valve Failure Due to High Cycle Fatigue
- IR 925906; Stop Work Order Issued per RP-AA-1002
- IR 928496; Incorrect LPRM GAF Data Issued for Calibration,
- IR 928048-03; Failure of motor operated valve 1-1001-7C and 1-1001-37B to return to the motor mode of operation after being placed in the manual mode of operation
- IR 953578; Equipment Operator started the standby Stator Water Pump instead of the Emergency Seal Oil Pump.

The inspector also reviewed a sample of Root Cause Report documents:

- IR 923518-03; Unable to maintain Pressure on the Unit 1 Generator Hydrogen Oil Seal
- IR 924223; Q1R20 Collective Radiation Exposure Exceeded the Goal
- IR 945611-03; Potential Inattentive Worker Identified During Dry Cask Campaign

The inspector reviewed a sample of Common Cause Analysis documents:

- IR 927421-02; Shaw/Stone and Webster Human Performance Deficiencies During Q1R20
- IR 932655-03; Analysis of Adverse Trend for Shutdown Safety Risk Management
- IR 935225-02; Review of Quad Cities Station Critical Component Failures from January 1, 2007 to July 1, 2009
- IR 932655; Analysis of Adverse Trend for Shutdown Safety Risk Management
- IR 941800; Causes of Personal Contamination Events occurring during Q1R20
- IR 947009; 2009 Online Dose Overages

The inspector reviewed a sample of Quick Human Performance Investigation Reports:

- IR 933806; Security to Evaluate Actions Taken in Response to an Alarm
- IR 946898; Shipping Violation – Overweight Rad Waste Shipment
- IR 953196; Radiological Survey Not Completed Within Required Time

The inspector reviewed each of the above documents in detail, discussed them with applicable site personnel, and reviewed the applicable governing documents, i.e. Technical Specifications, UFSAR, 10CFR. No issues were identified.

c. Conclusions

There were no significant issues identified during this inspection activity.

**INSPECTION PROCEDURES USED**

The following procedures were used to perform inspections during the report period. Documented findings are contained in the body of the report.

<u>Inspection Procedure</u>	<u>Title</u>	<u>Section</u>
IP 71111-01	Adverse Weather	R01
IP 71111-04	Equipment Alignment	R04
IP 71111-05	Fire Protection	R05
IP 71111-07	Heat Sink Performance	R07
IP 71111-11	Licensed Operator Requalification Program	R11
IP 71111-12	Maintenance Effectiveness	R12
IP 71111-13	Maintenance Risk Assessments and Emergent Work Evaluation	R13
IP 71111-15	Operability Evaluation	R15
IP 71111-19	Post Maintenance Testing	R19
IP 71111-22	Surveillance Testing	R22
IP 71114-06	Drill Evaluation	EP6
IP 71121-01	Access Control to Radiologically Significant Areas	OS1
IP 71122-01	Radioactive Gaseous and Liquid Effluent Treatment and Monitoring System	PS1
IP 71122-03	Environmental Monitoring Program (REMP) and Radioactive Material Control Program	PS3
IP 71152	Identification and Resolution of Problems	OA2

**LIST OF ACRONYMS USED IN REPORT**

10CFR	Title 10 Code of Federal Regulations
APRM	Average Power Range Monitors
ACE	Apparent Cause Report
ATWS	Anticipated Transient Without Scram
CRD	Control Rod Drive
CS	Core Spray
DG	Diesel Generator
EAL	Emergency Action Level
EC	Engineering Changes
EDG	Emergency Diesel Generator
EOP	Emergency Operating Procedures
ERO	Emergency Response Organization
FG1	General Emergency EAL
HA7	Alert EAL
HPCI	High Pressure Coolant Injection
HU1	Unusual Event EAL
IEMA	Illinois Emergency Management Agency
IEPA	Illinois Environmental Protection Agency
IR	Incident Report
ISG	Interim Staff Guidance
IST	In-Service Testing
LER	Licensee Event Report
MCR	Main Control Room
LPCI	Loss of Low Pressure Core Injection
MR	Maintenance Rule Program
MS3	Site Emergency EAL
NDE	Non-Destructive Examination
NRC	Nuclear Regulatory Commission
OSC	Operating Support Center
pCi/L	Picocuries per liter
PARS	Protective Action Recommendations
PMT	Post Maintenance Test
Q1R20	Unit 1 Refuel outage #20
QCOP	Quad Cities Operating Procedure
QCOS	Quad Cities Surveillance Procedure
REMP	Radiological Effluent Monitoring Program
RHR	Residual Heat Removal System
RO	Reactor Operators
RPS	Reactor Protection System
SSC	Structures, Systems, and Components
SSMP	Shutdown Makeup Pump
SRO	Senior Reactor Operators

TSC  
U1, U2  
UFSAR  
UHS

Technical Support Center  
Unit 1, Unit 2  
Updated Final Safety Analysis Report  
Ultimate Heat Sink