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LWP-97-010

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U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

SUBJECT: Quad Cities Station Operating Report
NRC Dockets (50-254 and 50-265)

Enclosed is the Radioactive Effluent Report for July through December 1996, for Quad Cities Nuclear Power Station.

The "B" Main Chimney G.E. noble gas monitor was inoperable from 7-15-96 through 8-24-96. The monitor was inoperable due to erratic response and a failed check source mechanism. The detector was replaced but the monitor could not be calibrated until a reactor was at power operation. This is because the calibration requires a radioactive gaseous mixture. We were unable to purchase a standard for purpose of calibration on such short notice. Compensatory measurements were not required since channel "A" Main Chimney G.E. noble gas monitor remained fully operational during this time frame.

A copy of this report will be furnished to the NRC Resident Inspector.

Sincerely,

COMMONWEALTH EDISON
QUAD CITIES NUCLEAR POWER STATION

D.B. Cook for

L. W. Pearce
Station Manager

LWP/JGW/sjm

Enclosure

IE48

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

Supplemental Information

Facility Quad Cities Nuclear Power Station

Licensee Commonwealth Edison Company

1. Regulatory Limits

a. For Noble Gases:

Dose rate

1. Less than 500 mrem/year to the whole body.
2. Less than 3000 mrem/year to the skin.

Dose Gamma Radiation

1. Less than or equal to 5 mrad/quarter.
2. Less than or equal to 10 mrad/year.

Beta Radiation

1. Less than or equal to 10 mrad/quarter.
2. Less than or equal to 20 mrad/year.

b.,c. For Iodine-131, for Iodine-133, and for all radionuclides in particulate form with half-lives greater than 8 days.

Dose Rate

1. Less than 1500 mrem/year

Dose

1. Less than or equal to 7.5 mrem/quarter
2. Less than or equal to 15 mrem/year.

d. For Liquid

Less than or equal to 3 mrem to the whole body during any calendar quarter.
Less than or equal to 10 mrem to any organ during any calendar quarter.
Less than or equal to 6 mrem to the whole body during any calendar year.
Less than or equal to 20 mrem to any organ during any calendar year.

2.. Maximum Permissible Concentration

a.,b.,c., For fission and activation gases, iodines, and particulates with halflives greater than 8 days, allowable release limits are calculated by solving equations 10.1 and 10.2 from the Offsite Dose Calculation Manual. The alarm setpoint is conservatively set at approximately 10% of the 10CFR20 limit.

d. For liquid effluents allowable release limits are calculated by solving equations 10.3 and 10.4 from the Offsite Dose Calculation manual. The MPC values used for the monitors were as follows:

radwaste discharge 1.78E-05 uCi/ml
service water 1.0E-05 uCi/ml

3. Average Energy

The average gamma energy used to calculate the alarm setpoints for the noble gas monitors was 0.478 Mev for the Third quarter, and 0.616 Mev for the Fourth quarter.

4. Measurements and Approximations of Total Radioactivity

a. Fission and Activation Gases:
b. Iodines:
c. Particulates:

The main chimney and reactor building ventilation exhaust systems are continually monitored for iodines and particulates. These samples are pulled every 7 days and analyzed by gamma isotopic. The particulate papers are composited every 31 days and sent to a vendor for Sr 89-90 and gross alpha analysis. Noble gas grab samples are pulled and analyzed by gamma isotopic weekly. Tritium samples are pulled and analyzed every month.

The continuous strip chart recorders for the monitors on the release points are reviewed monthly for spikes and the activity released is calculated. An additional calculated activity for noble gases is added to the Main chimney release each month. This calculation is done because most of the grab samples show less than the lower limit of detection due to the low amount of activity and the large dilution flow at the sample point. The calculation takes into account the normal offgas train and the gland steam contribution to the release.

The average flow at the release points are used to calculate the curies released.

d. Liquid Effluents

The river discharge tanks are analyzed before discharge by gamma isotopic. A composite representative portion of this sample saved. This is composited with other discharges that occurred every 31 days and is analyzed for tritium and gross alpha. The batch composites are composited quarterly and sent to a vendor for Sr 89-90 and Fe 55. The discharge bay is sampled every 31 days and analyzed by gamma isotopic, for tritium and gross alpha. It is sampled quarterly and sent to a vendor for Sr 89-90 and Fe 55 analysis.

The tank volumes and activities are used to calculate the curies released for the River Discharge Tank. The total water released during the quarter and the activity is used to calculate the diluted activity released at the discharge bay, from batch discharges.

e. Estimated Total Error Percent

The estimated total error percents were calculated by taking the square root of the sum of the squares of errors for sampling and measurement parameters. The estimated total error percent for the solid waste radwaste curies is 12.3%.

f. Less than the lower limit of detection (<LLD).

Samples are analyzed such that the Technical Specification LLD requirements are met. When a nuclide is not detected during the quarter then <LLD is reported.

5. Batch Releases

a. Liquid

1. number of releases 15
2. total time 14,961 minutes
3. maximum time 1,128 minutes
4. average time 997 minutes
5. minimum time 863 minutes
6. average stream flow, discharge 49.1 gpm, dilution 3.56E+05 gpm.

b. Gaseous

NONE

6. Abnormal Releases

a. Gaseous

NONE

b. Liquid

NONE