REGULATORY FORMATION DISTRIBUTION SYSTEM (RIDS)

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FACIL:50-389 St. Lucie Plant, Unit 2, Florida Power & Light Co. 05000389
AUTH.NAME AUTHOR AFFILIATION
UHRIG,R.E. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
EISENHUT,D.G. Division of Licensing

SUBJECT: Forwards description of mods to iodine removal sys,per 821021 discussion re offsite dose models.

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FACIL:50-389 St. Lucie Plant, Unit 2, Florida Power & Light Co.

[illegible]

Florida Power & Light Co.

[illegible]

Division of Licensing

SUBJECT: [illegible] description of [illegible] to iodine removal system [illegible]

[illegible]

[illegible]

P.O. BOX [illegible]00, JUNO BEACH, FL 33408

FLORIDA POWER & LIGHT COMPANY

October 29, 1982
L-82-474

Office of Nuclear Reactor Regulations
Attention: Mr. Darrell G. Eisenhut, Director
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Eisenhut:

Re: St. Lucie Unit No. 2
Docket No. 50-389
Iodine Removal System

Please find attached a description of modifications to the Iodine Removal System at St. Lucie Unit 2. These modifications are the results of discussions that were held with your staff on October 21, 1982, regarding offsite dose models.

If you have any questions, please contact us accordingly.

Very truly yours,

Robert E. Uhrig
Vice President
Advanced Systems and Technology

REU/RJS/JES/jk

Attachment

cc: J. P. O'Reilly, Region II
Harold F. Reis, Esquire

B001

ATTACHMENT

In order to obtain the maximum iodine removal efficiency by the Iodine Removal System (IRS), Florida Power & Light intends to make some minor modifications to the system design and operational characteristics. The result of these modifications is to maximize the period of hydrazine injection following a design basis loss-of-coolant accident. Maximizing the hydrazine injection period will be accomplished by lowering the hydrazine pump flow rate and making a procedural change in the emergency operation of the IRS. A brief discussion of these actions follows:

Decrease in Hydrazine Pump Flow Rate:

The hydrazine pumps are presently designed to operate at a flow rate of 2.5 gallons per minute. At this flow rate and assuming both pumps operating simultaneously, it would take 2.15 hours to empty the hydrazine storage tank. We have contacted the manufacturer of these pumps and have been informed that it is possible to reduce their flow rate to as low as 0.71 gpm. We have opted for that lower flow rate which will yield an injection time of 6.5 hours assuming that both pumps are operating. A corresponding change in the stored hydrazine concentration will be made in order to obtain the minimum required 50 ppm hydrazine concentration at the spray nozzles.

Emergency Operating Procedure for Hydrazine Spray Pumps

As indicated above, the hydrazine injection periods have always been estimated based on the assumption that both hydrazine pumps will be operated simultaneously. We intend to institute an emergency operating procedure which will require the operator to turn off one pump within one hour after the start of injection. This operator action, in combination with the use of the new pump flow rate, will result in a spray injection period of 12 hours.

It should be noted that it will be necessary for the operator to leave the control room in order to turn off one of the hydrazine pumps which are located in the electrical equipment room. We have, therefore, calculated the doses such an operator would receive if he were to leave the control room one hour after a LOCA, enter the electrical equipment room return to the control room and remain there until thirty days after the accident. We have found that the doses will be below the GDC-19 and SRP 6.4 levels. Consequently, we conclude such an operator action to be acceptable.

Control Room Dose

We have analyzed the above case whereby the control room operator receives a one hour control room dose, then leaves the control room to turn off one hydrazine pump and then returns to the control room and receives the remainder of his 31 day dose. The time outside the control room was established via a time-and-motion study whereby six FP&L operators physically performed this function. The longest time was selected and then doubled to account for any contingency.

Control Room Dose Cont'd

The results for the above case reveal that the control room operator receives 22.75 rems which is well below the limit of GDC-19. It should be noted that the plant emergency operating procedures will require the operator to wear a breathing apparatus (i.e. respirator) and thus the more realistic control room dose will be approximately 9 rem.