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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

December 9, 1975

Docket No. 50-10

Commonwealth Edison Company
ATTN: Mr. R. L. Bolger
Assistant Vice President
Post Office Box 767
Chicago, Illinois 60690

Gentlemen:

The NRC staff has completed its review of your requests dated December 19, 1974, April 1, 1975, and April 16, 1975, for authorization to carry out a chemical decontamination of the interior surfaces of the Dresden 1 Primary Coolant System. Based on our review of the decontamination program, we have concluded that the program can be conducted with reasonable assurance that the health and safety of the public will not be endangered.

During our review three items were identified as unresolved. It is our understanding that they will be resolved as follows:

1. The testing program will be completed and the results submitted for the review and approval of the NRC staff prior to performing the proposed chemical cleaning.
2. A pre-service inspection program for the primary coolant boundary will be formulated and submitted for our review and approval prior to returning the reactor to service.
3. A post-cleaning surveillance program which includes additional surveillance specimens and a specimen withdrawal and examination schedule will be submitted for our review and approval prior to returning the reactor to service.

On this basis the Commonwealth Edison Company is authorized to initiate its proposed chemical decontamination of Dresden Station Unit 1.

The staff's review is summarized in the attached Safety Evaluation.

Sincerely,

Karl R. Goller

Karl R. Goller, Assistant Director
for Operating Reactors
Division of Reactor Licensing

Enclosure:
Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AUTHORIZATION TO CHEMICALLY DECONTAMINATE THE PRIMARY
COOLING SYSTEM AT DRESDEN UNIT 1

COMMONWEALTH EDISON COMPANY

DRESDEN NUCLEAR POWER STATION UNIT 1

DOCKET NO. 50-10

INTRODUCTION

By letters dated December 16, 1974, April 1, 1975 and April 14, 1975, the Commonwealth Edison Company (CECo) requested authorization to carry out a chemical decontamination of the interior surfaces of the Dresden Unit 1 primary coolant system.

The purpose of the decontamination is to remove a deposition of activated corrosion products which is tightly bonded to the primary coolant system piping and components. The presence of the corrosion products in the system results in high levels of radiation in adjacent areas and limits access to these areas for the purpose of in-service inspection, routine maintenance and plant modifications.

CECo has tentatively scheduled the chemical cleaning project to begin in January 1977 with an anticipated return to service scheduled for July 1977.

EVALUATION

The staff's review of CECo's proposed chemical decontamination of the interior surfaces of the Dresden Unit 1 primary coolant system has been completed. The results of this review are as follows:

1. Environmental Impact

The chemical decontamination of the Dresden 1 primary coolant system will be performed entirely within a closed decontamination system. The system has been designed so that no chemical or radiological wastes will be released to the environment from the decontamination process. All wastes generated in the process will be either solidified for offsite burial at a licensed burial ground or reprocessed for reuse onsite. The solid wastes produced are similar in type and quantity to those handled routinely at the site. Therefore, no adverse environmental impacts are anticipated due to the decontamination.

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2. Materials Compatibility

The staff has reviewed the results of the material testing program that has been carried out in support of the proposed Dresden 1 decontamination program. The test program was organized to look at corrosive effects during the decontamination process and possible residual effects during subsequent reactor operation.

Based upon our review of the results of the testing program completed to date, we have concluded that the test program adequately evaluated those aspects of the materials compatibility that we consider to be important. As a result of our discussions with CECO's consultant, Dr. Craig Cheng of Argonne National Laboratory, we find that the remaining program will be conducted in a manner that will answer our presently unresolved concerns and the test results will be adequately interpreted and reported.

We conclude that upon the successful completion of the testing program described in the submittals and with an adequate surveillance and inspection program, the Dresden Nuclear Power Station Unit 1 can be subjected to the described chemical cleaning process without undue corrosion or other deleterious materials compatibility effects that would adversely effect the integrity of the primary coolant system and connected systems.

A small number of items of concern have not been resolved to the staff's full satisfaction at this time. However, we conclude that authorization to carry out the chemical decontamination should be granted in anticipation of the successful resolution of these open items in the near future. The following open items are identified at this time as requiring resolution to the staff's satisfaction:

- (a) The materials test program will be completed and the test results will be analyzed and reviewed prior to the beginning of the cleaning process.
- (b) Surveillance specimens in addition to those now planned will be determined by mutual agreement with the applicant and a schedule for specimen withdrawal will be stated.
- (c) A pre-service inspection program for the primary coolant boundary and safety related systems will be formulated and performed prior to return to power.

3. Effluent Treatment Systems

We have determined that the effluent treatment system, if constructed as described in the CECO submittals, is capable of handling the types and quantities of effluents expected to be generated by the decontamination program. Our review was limited to the use of the system for chemical decontamination only, and use of the system for any other purpose subsequent to that program must be reviewed prior to such use.

4. Radiological Safety

We have further concluded that the radiological safety program described in the submittals is adequate to assure that the health and safety of the public and the onsite personnel will not be endangered by the Dresden 1 decontamination project.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the chemical cleaning does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the cleaning project does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: December 9, 1975

P.O. O'Connor

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O. L. Ziemann, Chief
Operating Reactors Branch #2

REVIEW OF DRESDEN 1 CHEMICAL CLEANING LICENSING SUBMITTAL

The chemical cleaning licensing submittal for Dresden 1 has been reviewed. The decontamination program as proposed releases no effluents to the environment and the solid wastes produced are similar in type and quantity to those handled routinely at the Dresden site. Therefore, no adverse environmental impacts due to decontamination are anticipated.

Original signed by B. J. Youngblood

B. J. Youngblood, Chief
Environmental Projects Branch 3
Division of Reactor Licensing

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