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LEON D. WHITE, JR.
VICE PRESIDENT

TELEPHONE
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February 28, 1979

Mr. George H. Smith, Chief
Fuel Facility and Materials Safety Branch
U. S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Subject: IE Inspection No. 50-244/79-01
R. E. Ginna Nuclear Power Plant, Unit #1
Docket No. 50-244

Dear Mr. Smith:

This letter is in response to your February 6, 1979 letter received February 8, 1979 concerning the inspection conducted at Ginna Station January 9-12, 1979 by Mr. Yuhas of your office. Your letter listed activities as not being conducted in full compliance with NRC requirements, as quoted below. This letter contains information in response to these items.

ITEM A

"10 CFR 20.103(a)(3), 'Exposure of individuals to concentrations of radioactive materials in air in restricted areas,' requires that the licensee use suitable measurements of concentrations of radioactive materials in air for detecting and evaluating airborne radioactivity in restricted areas.

"Contrary to this requirement, on April 5, 1978, individuals were permitted to work under Special Work Permit No. 444, 'Clean and lubricate thimble tubes,' and a measurement of the concentration of radioactive materials in the workers breathing zone during decontamination of the seal table was not made. At the completion of this work one individual was found to have facial contamination. Subsequent whole body count measurements performed after decontamination indicated the presence of: .821 uCi Cobalt 60, .639 uCi Cobalt 58, and 2.68 uCi Chromium 51, in or on the workers body."

RESPONSE 7904090251

The incore thimble cleaning on April 5, 1978 was in its third day of progress. The permits for the previous two days were written with no requirement for measurement of airborne activity based on performance of this activity



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in 1976. This was the first year, however, in which a pressure water jet cleaning method was used. The new procedure included vendor provided steps in an attachment. Detail 5.c of the inspection report should be corrected as the performance of the job at this time did not involve flushing with a volatile organic solvent but with demineralized water.

On the second day, one individual received facial contamination from a water leak during the thimble cleaning operation. He washed himself, including his mustache, and informed the Health Physics staff. A nasal smear indicated 1.9×10^{-4} uCi of gross activity which is not indicative of significant exposure to airborne activity. A Skin Decontamination Record was prepared which indicated a post decontamination survey reading of background. There is no evidence to indicate that air sampling should have been required as the whole body counts showed insignificant inhalation of airborne radioactive material had occurred. This is discussed further in item B.

On the third day, SWP 444 was prepared. No requirements for measurement of airborne activity were included as the previous day's contamination was not an airborne problem. When the procedure as written was completed, the individuals on the job cleaned the seal table. This activity was regarded by the workers as within the proper scope of SWP 444 although not explicitly addressed in the SWP. They selected acetone as a cleaning agent. A Skin Decontamination Record indicated that the solvent penetrated the gloves of the worker who later was shown to have the highest indicated amount of contamination.

In the course of the last year, occupational monitoring requirements at Ginna Station have become more stringent. As a part of this increased monitoring, air sampling is prescribed for a greater number of situations. In the particular case of the incore thimble cleaning procedure, improvements and precautions are planned to provide for minimizing contamination, collecting air samples, controlling use of acetone and conducting periodic surveys. These will be finalized before the next performance of this job.

ITEM B

"10 CFR 20.201(b), 'Surveys,' requires that such surveys be conducted as may be necessary to comply with the regulations contained in each section of Part 20. A 'survey,' as defined in Paragraph 20.201(a), means 'an evaluation of the radiation hazards incident to production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions. When appropriate, such evaluation includes a physical survey of the location of materials and equipment, and measurements of levels of radiation or concentrations of radioactive materials present.'



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"Contrary to the above, on April 5, 1978, whole body counts performed on one individual indicated the presence of .821 uCi Cobalt 60, .639 uCi Cobalt 58, and 2.68 uCi Chromium 51 which the licensee assumed to be external contamination and a survey or evaluation necessary to comply with the regulations contained in 10 CFR 20.101 was not conducted."

RESPONSE

After completion of work on the seal table the face, hair and hands of one of the contract workers alarmed the frisker at the controlled area exit. The Skin Decontamination Record for this individual noted that, although the post decontamination survey indicated no localized external contamination above 100 cpm, there were indications over most of the body of 50 to 100 cpm. The whole body count profile (longitudinal scan versus gross count rate) indicated some contamination on the head or hair with the majority on the lower part of the body at the waist line possibly from the hands. There was no concentration in the lungs which eliminated the possibility that inhalation of airborne radioactive material had occurred. Since the contamination appeared to be external the amounts of activity indicated by the whole body count are quite likely to be erroneously high. For instance, if the skin of the hands were contaminated by Cobalt 60 and the person counted had his hands folded over his waist, the amount of Cobalt 60 indicated in the whole body count would be high by a factor of 3. It was recognized that a dose resulting from ingested radioactivity would be minimal, and external contamination from a small localized area was not apparent. Further whole body counts were needed to complete the evaluation of the individual's contamination and the resulting dose. The Health Physicist was informed that the contract worker was planning to report to another reactor site, and he made arrangements with the worker's management and the facility at which he was to report to have a follow-up whole body count performed. The follow-up whole body count obtained 16 days later indicated minimal levels of radioactivity. The rapid removal of radioactive material precluded deposition in the lung and indicated that the material had been present on the skin. This was additionally verified by the whole body count results of two company workers who worked alongside the contract individual, and were counted 2 and 3 days respectively after the contamination incident. Their whole body counts were minimal, precluding exposure to airborne radioactive materials.

A subsequent evaluation was written which identified the worker contamination as external and which provided recommendations for the prevention of future contamination problems. However, a numerical estimate of the skin dose resulting from the external contamination was not deemed necessary. A detailed dose evaluation has been performed subsequent to Inspection 79-01 which reaffirmed the earlier judgment that no regulatory limit had been exceeded.



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To insure that adequate evaluations are performed and fully documented in the future, steps have been added to the procedure HP-2.2 Whole Body Count Operation, and a new procedure HP-2.5 Whole Body Count Evaluation is being written to be completed by the end of March.

ITEM C

"10 CFR 20.409(b) 'Notifications and reports to individuals,' states: 'When a licensee is required pursuant to §§20.405 or 20.408 to report to the Commission any exposure of an individual to radiation or radioactive material, the licensee shall also notify the individual. Such notice shall be transmitted at a time no later than the transmittal to the Commission, and shall comply with the provisions of §19.13(a) of this chapter.' 19.13(a) states, in part: 'The information reported shall include data and results obtained pursuant to Commission regulations, orders, or license conditions as shown in records maintained by the licensee pursuant to Commission regulations.'

"Contrary to the above requirement, on June 6 and June 16, 1978, the licensee furnished reports to three individuals that did not include their whole body count data and results obtained pursuant to 10 CFR 20.103(a)(3) and maintained pursuant to 10 CFR 20.401."

RESPONSE

The whole body count data and results were not included in the dose reports to the individuals. Nevertheless, the individuals were aware of their whole body counts before they left the site and after departure as verbal contact had been maintained and subsequent body counts were scheduled and taken. Reports of the results of their whole body counts and dose estimates will be sent to these individuals by mid-March. In October 1978 the exposure report form was revised to ensure whole body count results were being reported as well as external exposure results. Presently information from whole body counts is being entered into the newly established computerized dose program. This is also being done for individuals presently on site for counts in the year of 1978. The computerized dose report letter presently being produced by this system automatically includes the whole body count information.

The inspection report contains no information that is considered proprietary.

Very truly yours,

L. D. White, Jr.
L. D. White, Jr.

