

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

AUG 0 5 1981

EVALUATION OF WASTE BURIAL AREA AT VA HOSPITAL LOS ANGELES, LICENSE NO. 04-00181-04

NMSS - SUMMARY AND CONCLUSION

Between 1960 and 1968 the licensee utilized Veterans Administration property adjacent to the medical facility for burial of radioactive waste from their medical diagnostic, therapeutic, and research programs (License No. 04-00181-04). These burials were authorized under Title 10, Code of Federal Regulations, Part 20, of the Commission's radiation protection standards. Further, the licensee's burial records indicate that disposal was in accordance with the limitations and conditions under Section 20.304. No burials have been made by the licensee since 1968.

In 1969 AEC (predecessor to the NRC) was asked by the General Services Administration to determine if there should be any "restrictive or limiting conditions" imposed on future use of the property. The results of the AEC evaluation in 1969 were that the Commission placed no restrictions on the use of the land where the licensed byproduct material had been buried since it conformed with the limitations and conditions of Section 20.304, Title 10, Code of Federal Regulations, Part 20.

Recently, at the request of Councilman Marvin Braude's office (Los Angeles, CA), a group of three professional health physicists certified by the American Board of Health Physics, from the Southern California Chapter, Health Physics Society, performed an independent evaluation of the former burial site at the Wadsworth Veterans Administration "edical Center. The group agreed that the materials buried at the site did not present a health risk. In addition, this group consulted with prominent health physicists from the Oak Ridge National Laboratory, who also agreed with their evaluation of the health risk.

On May 7, 1981 a radiological survey of the former burial site was conducted by NRC inspectors. Radiation measurements were taken at several locations on a random basis, using instrumentation capable of detecting the radiation from minute quantities of gamma emitting materials. No increases in the normal, natural radiation background levels were detected. The site inspection also revealed that the original burials are now at a minimum depth of 15 to 30 feet because of the dumping of additional fill at the site.

Enclosure 1

8204150474 820216 PDR FDIA NELSON82-11 PDR In May of this year, the Los Angeles Department of Water and Power collected water samples from five wells near the burial site. A comparison was made of these water samples with representative groundwater data for the overall area. This evaluation considered gross alpha activity, gross Beta activity as well as tritium (H-3) on Carbon-14 content. Results indicate no levels of unsatisfactory radioactive contaminations in accordance with acceptable levels defined in the Safe Drinking Water Act.

Extensive calculations of potential individual radiation dose from two possible intake pathways resulting from the buried radioactive material were performed by NRC's Uranium Fuel Licensing Branch. A generally conservative approach was used and may have yielded an over-estimate of dose. Regardless, the potential for both external and internal radiation exposure was found to be minimal and potential radiation exposure from the buried radioactive materials was found to be substantially less than that from background radiation levels.

An analysis of radioactive materials buried at the site further places the situation in a reasonable perspective. The majority of the radioactive materials buried were medical-use materials with short halflives. Of the longest lived isotope (Na-22, T-1 = 2.6 years), less than 5% of the original activity remains. The only long half life radioactive materials buried were small quantities of tritium (H-3) and Carbon-14. Approximately 450 millicuries of tritium remain in the ground at the site. As a conservative estimate, all of the Carbon-14, about 54 millicuries, remains in the ground at the site. Both tritium and Carbon-14 are low toxicity radioisotopes. It is important to note that all of this material was buried initially with at least 4 feet (actually 6 - 8 feet) of soil cover and subsequently covered with approximately 10 to 15 additional feet of fill (concrete, debris and soil). The materials were distributed and diluted over a wide area and volume of the burial site, thereby further reducing the already insignificant radiation hazard probabilities.

Most of the H-3 and C-14 waste buried by the Veterans Administration consisted of animal carcases and scintillation liquids. Effective March 11, 1981, the NRC Regulations were amended to exempt most biomedical wastes such as these, containing H-3 and C-14, from the regulations. Before this was done, very careful evaluations were made by the NRC to determine the possible effects of removing the existing controls on such disposals.

In view of the results of the extensive evaluations which have been conducted concerning the radioactive materials buried adjacent to the Wadsworth Veterans Administration Medical Center, we conclude that the property may be released without restriction on its future use. Detailed reports of each of the evaluations are included as enclosures to this document.

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