20.201(b) "Surveys"
- in that no physical evaluations or air sampling were made to determine the extent of uranium airborne contamination in the unrestricted areas adjacent to the plant during incineration of uranium-contaminated waste. (See item 15E(2) of Part 70 report details.)

- in that no breathing zone samples were taken during the furnace operation to adequately evaluate the furnace melt operator's exposure to radioactive aerosols. (See item 15D of Part 70 report details.)

SNM-195

20.203 "Caution signs, labels and signals"
(f) "Containers" (4) - in that a shipping container, which contained 5 kgs U-235, was not labeled as to type and amount of material. (See item 18 of Part 70 report details.)

(f) "Containers" (1) and (4) - in that a one gallon can containing 1162 grams of uranium, 25% enriched, was not labeled with any "Caution - Radioactive Materials" sign or symbol or enrichment. (See item 18 of Part 70 report details.)

C-5161

20.203 "Caution signs, labels and signals"
(f) "Containers" (2) and (4) - in that six containers each containing 600 pounds of depleted uranium were not labeled with the proper radiation caution sign and symbol or the type and amount of material. (See item 9.1 of Part 40 report details.)

It was pointed out to both Canham and Weiss that the items of noncompliance under 20.203(f)(1), (f)(2), and (f)(4), "Containers", were found in the previous inspection. It was also pointed out that most of the containers, with the exception of those found during this inspection, were properly labeled. Weiss said that he would try to prevent a recurrence of this citation.

With regard to the other citations found under Licenses SNM-185 and C-5161 jointly, Canham was informed that the 20.201(b) citation, "Surveys", although not exactly the same as that reported in the previous inspection, indicated a lack of adequate evaluation of air samples for the melting operation. Canham was informed that the melting operation has appeared to be a source of trouble as evidenced by the noncompliance items noted during the November 19, 1959 inspection and our Class "B" investigation of July 19, 1960. Both Weiss and Canham stated that they would take all necessary action to correct these items of noncompliance and to minimize exposures to personnel. Weiss also stated that he would arrange to have glasses worn by the melt operators and other individuals who may receive an exposure to the eyes as a result of working directly with or close to special nuclear and source materials.

The citations under 20.101 and 20.105 were discussed with both Canham and Weiss. It was pointed out to Weiss that he completely overlooked several excessive biweekly doses to the melt operator, and that he did not reduce exposures to 10% of the permissible limit set forth in Appendix A (old Part 20) after the melt operator received 13 week exposures in excess of 3 rems. Weiss said that he would be more careful in his review of the records so that he could take immediate appropriate action when necessary to keep the personnel exposures within the permissible levels as set forth in Part 20.

It was pointed out to both Canham and Weiss that all of the aforementioned citations were being made under the old Part 20.

No significant hazard exists from the above item of noncompliance, and no follow-up inspection will be made.

Both Canham and Weiss appeared to be sincere in their desire to operate in a safe manner in accordance with the federal regulations. We recommend that a letter be sent to Mr. F. Mittendorf, with copies to C. A. Canham, Plant Manager, and Norton M. Weiss, Health and Safety Manager, setting forth the items of noncompliance and requiring corrective action to the satisfaction of the Commission.

There were no items of noncompliance noted during the inspection as far as criticality control is concerned. However, we do feel there are many areas for improving criticality control in this plant. We observed two areas in which fairly simple changes could be made, so that the control would be by an always-safe geometry rather than by batch control. One of these areas was noted in the body of the report as being the trough under the power hacksaw, the other area is the trough under the lathe. The graphite crucibles which are used in the furnaces are not of always-safe geometry. In some other plants we have visited, such crucibles are of 5" inside diameter. We feel that this is also an area that could stand exploration for making it always geometrically safe.

Our general impression of the management and operation of this plant is that the top management does not have a keen appreciation of the possibility and extent of a nuclear catastrophe. There seems to be a tendency in this plant to burden the Health and Safety Department members with a multitude of jobs. This is unfortunate

because we feel that there are areas, as noted before, where safe geometry could be studied, and we also note that there are areas in the keeping of health physics records which might be simplified if time were available to study the method of record keeping. We feel that Weiss, the Criticality Engineer, does an adequate job of indoctrination of new employees on criticality and health physics. However, as one tours the complete plant, that is, first the non-nuclear plant where ordinary materials are being processed, and then the section of the plant where uranium is being processed, there is very little to make one aware in the nuclear plant that there is always the possibility of a major catastrophe. Since control depends strictly on discipline, because safe geometry is not employed, there is a need for this discipline to be reaffirmed by the top management of the organization. We feal that, by a definite statement of the top management that no violations of safe criticality control procedures will be countenanced, the job of the criticality engineer in enforcing these procedures would be considerably lightened. We discussed these points briefly with Mr. C. A. Canham, the present Plant Manager, and Canham seemed quite receptive and cooperative.

As noted above, we requested that letters be sent to Mr. F. Mittendorf, Vice President of Engelhard Industries, and General Manager of D. E. Makepeace Division. This office had contacted Mittendorf immediately after the inspection and at least half a dozen times during the months of December and January in attempts to set up a suitable meeting date so that the items of noncompliance and our impressions of his plant operations and organization could be fully discussed with him. We have not been successful in setting up a meeting because of Mittendorf's other company appointments and travel. This office feels that there should be no further delay in submitting this report or in taking enforcement action. We still hope to set up a suitable date

for discussing the aforementioned points with Mr. Mittendorf. When this meeting takes place, any additional information resulting from our meeting will be forwarded to Headquarters.

Enclosure:
4 cys Rpt.