DCD(SP06) To: Lohaus, SP

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STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

DON SUNDQUIST
GOVERNOR

MILTON H. HAMILTON, JR.
COMMISSIONER

11/16/99 Ltr.

November 19, 1999

William D. Travers
Executive Director for Operations
Nuclear Regulatory Commission
Washington DC 20555-0001

Dear Mr. Travers:

In response to your request of November 16, 1999, I am enclosing information addressing the four points you raised concerning Manufacturing Sciences Corporation (MSC). This will supplement the copy of the March 1999 amendment to the MSC license and the supporting documentation provided to Mr. Paul Lohaus of the NRC's Office of State Programs under a cover letter dated November 16, 1999.

I am completely committed to ensuring the health and safety of our citizens, and will continue to closely monitor this project. If you require any other materials, please contact me or the Division of Radiological Health.

Sincerely,

Milton H. Hamilton, Jr.

MHH:LEN:jhg

PDR S TPRG

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EXECUTIVE SUMMARY

MANUFACTURING SCIENCES CORPORATION
AUTHORIZATION TO DECONTAMINATE NICKEL FOR UNRESTRICTED RELEASE

Description of Activities Authorized by the March 1999 Amendment

The March 1999 amendment authorized, in general terms, the receipt, decontamination, sampling and survey (to determine compliance with approved unrestricted release criteria), and release of 6000 tons of decontaminated nickel. This authorization was issued following years of research and process development activities performed by Manufacturing Sciences Corporation (MSC), to develop and validate the effectiveness of its decontamination process, under license authorization issued in 1990.

In accordance with a November 15, 1999, verbal request by NRC staff, copies of the March 1999 amendment to the MSC license (originally issued on August 8, 1985) and non-proprietary referenced supporting documentation have been provided to the NRC, under a cover letter dated November 16, 1999.

Basis on Which Authorized

The basis for the March 1999 amendment was:

- Operational information submitted during the research and development phases of the project as authorized in earlier amendments which demonstrated the feasibility of the process.
- Criteria for unrestricted release based on various analyses performed by the licensee and the Division, including "Risk Analysis: Nickel Contaminated with ^{99}Tc and Uranium," submitted in support of the amendment request, and comparison to the criteria of NRC Regulatory Guide 1.86.
- The sampling plan submitted in support of the amendment request, which provided for each finished nickel ingot to be sampled and analyzed for quality control purposes during ingot production and for quality assurance purposes after production.
- The presence of an adequate radiological worker and environmental protection program as determined through the routine inspection program conducted by the Division.

Process Description

A complete description of the electro-refining process used by MSC to decontaminate nickel is contained in the following documentation, which is proprietary information as provided under Tennessee "State Regulations for Protection Against Radiation," supporting an earlier amendment request:

- "Functional Specification Full Scale Electro-refining Experiment Modification 1, April 2, 1998"

The following is a general description of the activities authorized ancillary to the processing of nickel:

- Nickel barriers from the gaseous diffusion process are removed from the decommissioned facilities at the former K-25 site.
- Contaminated nickel components are transported to MSC in sealed security containers.
- MSC personnel with appropriate security clearances transfer the nickel into the induction furnaces where it is melted.
- A fluxing agent is added to the melt to promote movement of contaminants into the slag.
- The nickel is poured into a mold to form a nickel anode.
- The nickel anode is processed electro-chemically to remove contaminants to meet established criteria.
- Each nickel ingot is sampled and analyzed for compliance with established criteria for quality control and quality assurance purposes.
- Nickel not meeting the criteria may either be reprocessed or disposed in accordance with the Division's regulations.

Description of Status of Operations Under the License

- One production-scale cell is currently being operated for experience and optimization of the process.
- Construction of the production facility has not yet begun. Current plans call for construction activities to commence early in the year 2000 and to require about four (4) months to complete. Facility design engineering is approximately sixty (60) percent complete.
- No nickel has been released for unrestricted use to date.
- First shipment of processed nickel is expected approximately November 2000.

COMMISSIONER'S OFFICE
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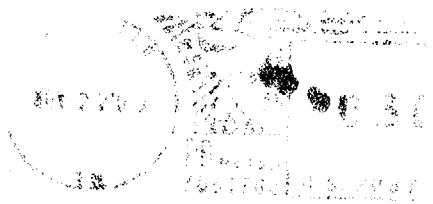

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