May 2, 1997

MEMORANDUM TO: Philip Ting, Chief
Operations Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

FROM: Michael Weber, Chief
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

Original signed by:

SUBJECT: REVIEW OF DRAFT RTM-96 SUPPLEMENTS FOR PADUCAH AND PORTSMOUTH GASEOUS DIFFUSION PLANTS (GDPs)

This is in response to your March 29, 1997, request to review and provide comments on the GDPs' RTM-96 supplements. Due to our work load, only a limited 2 hour review was done.

One concern noted with the supplements is with Section 9.0, "Technical Basis." It is not clear what all the assumptions were for the models used for the hydrogen fluoride (HF) intake-versus-distance and the uranium dose-versus-distance figures for the uranium hexafluoride (UF_6) releases. Section 9.0 seems to indicate that the UF_6 releases are based on one-hour exposures to both the HF and uranyl fluoride (UF). This is a very unrealistic assumption, since a plume of UF_6 and hydrolysis products (HF and UF) would be visible and have a strong bitter odor, and would burn the eyes and nose. It is hard to imagine anyone staying in this environment for a few minutes, much less one-hour, unless they are trapped like the individual who was killed at the Sequoyah Fuels facility. Furthermore, as indicated on pages 8-1 and 8-2, the odor threshold for HF is very low (0.033 to 0.133 ppm) compared to the toxic level (30 ppm), which requires immersion in an obvious and discernable HF plume.

A further concern noted with Section 9.0 is that it is not clear what happens to the UF. The models seem to be based on the assumption that the UF is carried up with the UF_6 plume and that none is deposited out. Studies indicate that a large percentage of the UF would <u>not</u> be carried up with the plume but would be deposited close to the release point. Thus, if the models assume all of the UF is taken up in the plume, the uranium dose-versus-distance figures would be very unrealistic.

If you have any questions regarding these comments, please contact Ed Flack, who reviewed the RTM-96 supplements for FCLB.

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NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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