



United States Department of the Interior

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IS REPLY REFER TO

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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Sirs:

Enclosed are three copies of Revision 6 of the Emergency Plan for the U.S. Geological Survey TRIGA Reactor (GSTR) Facility. The plan was revised as permitted by 10 CFR 50.54(q) and this report is submitted accordingly. The recent changes of 10 CFR 20 have provoked this revision in order to reflect the new terminology and criteria in those changes. The reactor staff and the Reactor Operations Committee have reviewed the revised plan and feel that they do not decrease the effectiveness of the plan.

All changes made by Revision 6 are on pages 9 and 10 of the plan. The changed text areas of the plan are marked with a vertical line in the margins of the pages. Explanations of the changes are given on the following attached page.

Please contact the Reactor Supervisor (Tim DeBey) at (303) 236-4726 if you have any questions regarding the revision or need further details.

Sincerely,

Carl Hedge
Dr. Carl Hedge
Reactor Administrator

Copy to:
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Evaluation for changing Emergency Action Levels from "MPC"-based to "DAC"-based quantities.

1. UNUSUAL EVENT-

Current action level: (4.2.1.4)

Actual or projected radiological effluents at the site boundary exceeding 10 MPC when averaged over 24 hours or 15 mrem whole body accumulated in 24 hours.

Revised action level:

Actual or projected integrated radiological effluents at the site boundary exceeding 15 mrem whole body in 24 hours or 2.5 DAC when averaged over 24 hours for those radionuclides that cause non-stochastic effects to specific organs. (Refer to 10CFR20 Appendix B, Table 1 for non-stochastic limiting organ.)

Basis:

The DAC levels are given in 10CFR20, Appendix B, Table 1. The values in this table are based on annual limits on intake that would result in either a committed effective dose equivalent (CEDE) of 5 rems or 50 rems to an organ. The action level limits the whole body dose to 15 mrem. Given the whole body-to-limiting organ ratio of 1:10, a release with a 2.5 DAC average over 24 hours would result in 60 DAC-hours of exposure. One DAC-hour gives 2.5 mrem CEDE, so 60 DAC-hours would give 150 mrem CEDE, or ten times the whole body CEDE. This provides equivalent risks from the two criteria.

2. ALERT-

Current action level: (4.2.2.2 + 4.2.2.3)

Actual or projected radiological effluents at the site boundary exceeding 50 MPC for unrestricted areas when averaged over 24 hours, or 75 mrem whole body accumulated in 24 hours.

Radiation levels at the site boundary of 20 mrem/hr for 1-hour whole body or 100 mrem thyroid dose.

Revised action level:

Actual or projected integrated radiological effluents at the site boundary exceeding 75 mrem whole body in 24 hours or 12.5 DAC when averaged over 24 hours for those radionuclides that cause non-stochastic effects to specific organs. (Refer to 10CFR20 Appendix B, Table 1 for limiting organ in non-stochastic cases.)

Radiation levels at the site boundary exceeding 20 mrem/hr (whole body) for one hour.

Basis:

Similar to basis given above, with 300 DAC-hours resulting in 750 mrem CEDE, or ten times the whole body CEDE limit. The limit of 100 mrem thyroid dose is removed since it is inconsistent with the other action levels, based on the risk equivalency of 10CFR20, Appendix B. The thyroid dose would be limited by the DAC level restriction.