ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

August 15, 2005

Mr. Thomas Dragoun
NRR/DRIP
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

SUBJECT: DOCUMENT REVIEW—FINAL STATUS SURVEY REPORTS, SAXTON NUCLEAR EXPERIMENTAL CORPORATION, SAXTON, PENNSYLVANIA (DOCKET NO. 50-146; TASK 1)

Dear Mr. Dragoun:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) has reviewed Saxton Nuclear Experimental Corporation (SNEC) final status survey reports submitted to the U.S. Nuclear Regulatory Commission (NRC) on July 14, 26, and 27, 2005. These documents describe the final status survey results for the following SNEC-designated areas: CV Yard Excavation; Open Land Area OL1, OL1 Residual Concrete, [Open Land Areas] OL6 and OL10, and SSGS Spray Pump Area.

Comments identified are enclosed for your consideration. If you have any questions, please contact me at (865) 576-3356 or Alex J. Boerner at (865) 574-0951.

Sincerely,

Timothy J. Bauer
Health Physicist
Environmental Survey and
Site Assessment Program

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Enclosure

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Rec'd 10/13/05
Review Ltr
A Adams

Comments on
Final Status Survey Reports
Saxton Nuclear Experimental Corporation
Saxton, Pennsylvania

August 2005

Saxton Nuclear Experimental Corporation (SNEC) submitted final status survey reports (FSSR) to the U.S. Nuclear Regulatory Commission (NRC) on July 14, 26, and 27, 2005. These documents described the final status survey (FSS) results for the following SNEC-designated areas: CV Yard Excavation, Open Land Area OL1, OL1 Residual Concrete, [Open Land Areas] OL6 and OL10, and SSGS Spray Pump Area. The FSSRs were reviewed for completeness and conformance to the SNEC License Termination Plan (LTP, GPU 2004) and the MARSSIM (NRC 2000). Comments noted during the reviews are identified below.

CV Yard Excavation (GPU 2005a)

1. Section 6.1, Table 1—The "administrative Cs-137 $DCGL_W$" for survey unit MA8-1 is noted as 19,834 dpm/100 cm^2. The text on Page 13 notes the "gross activity administrative $DCGL_W$" to be 33,325 dpm/100 cm^2 as well as being the value used in Appendix A calculations. ESSAP recommends that the table be corrected to refer to the latter value and noted as the gross activity administrative limit. This comment also applies to survey units MA8-2, CV4-2, and CV5-1 listed in Table 4 on Page 16; survey unit MA8-3 listed in Table 7 on Page 21; and, survey unit MA8-4 listed in Table 11 on Page 26.

2. Section 6.2, Table 4—The WRS Test is listed as the applicable statistical test for the soil survey unit OL1-3. This appears to be a typographical error and should likely be noted as the Sign Test to be consistent with other soil survey units discussed in this FSSR, e.g. survey unit OL1-2 listed in Table 1 on Page 12.

3. Section 6.2, Table 4—The "Administrative Cs-137 $DCGL_W$" is listed as "2.2 to 4.4 pCi/g" for survey unit OL1-3. This appears to be a typographical error because Section 6.2.1 notes the "Administrative Cs-137 $DCGL_W$" as 4.3 pCi/g.

4. Section 6.3.2, Page 23—Please discuss, providing appropriate references (e.g. LTP), the applicability of using NaI direct measurements of concrete surfaces.

5. Section 8.0, Page 37—The first item in this section states that the "average residual radioactivity in the areas surveyed was less than the assigned DCGLw." The average should be compared to the administrative limit (AL) rather than the $DCGL_W$. This comment also applies to the second and third items in this section.

Open Land Area OL1 (GPU 2005b)

1. Section 8.0, Page 23 of 24—The first item in this section states that the "average residual radioactivity in the soils is less than the derived surrogate DCGLw in all six survey

units." The average should be compared to the AL rather than the $DCGL_W$. This comment also applies to the second and third items in this section.

2. Appendix A, Attachment 3-1—Were the two instrument/probe combinations noted as having an instrument conversion factor/efficiency less than 205.6 cpm/μR/hr used during the FSS? Refer to Appendix A, Section 2.1.2, Page 3 of 11 for this requirement.

OL1 Residual Concrete (GPU 2005c)

1. Section 5.0, Table 1, Page 7 of 27—Please discuss, providing appropriate references (e.g. LTP), the applicability of using the Sign Test for non-radionuclide-specific measurements of the concrete surfaces. This approach contradicts Section 4.4 of the Penelec Switch Yard Control Building FSSR (GPU 2005d).

2. Section 7.4.2, Page 25 of 27—This section describes the fixed point QC measurement results. SNEC noted that the results provided in Table 12 had good agreement and supported the same conclusion. However, according to SNEC Procedure E900-IMP-4520.04, *Survey Methodology to Support SNEC License Termination* (GPU 2005e), Section 4.6.2.4 indicates that for static measurements, QC measurements must have the same conclusion and must be within 20% of the original result. The following QC measurements shown in Table 12 do not meet the 20% requirement: SS12 6 and SS24-2 4. ESSAP recommends SNEC re-evaluate the QC measurements using the two times background provision discussed in Procedure E900-IMP-4520.04.

3. Section 8.0, Page 37—The first item in this section states that the "average residual radioactivity on the surfaces is less than the derived surrogate DCGLw in both survey units." First, the average should be compared to the AL rather than the $DCGL_W$. This comment also applies to the second item in this section. Second, there are nine survey units in the FSSR.

[Open Land Areas] OL6 and OL10 (GPU 2005f)

1. General—In many sections of the FSSR, data are compared to the $DCGL_W$ rather than the AL, e.g. Sections 7.4 and 8.0. ESSAP recommends that SNEC review this FSSR carefully for applications of this comment.

2. Appendix A-1, Attachment 3-1—Were the three instrument/probe combinations noted as having an instrument conversion factor/efficiency less than 206 cpm/μR/hr used during the FSS? Refer to Appendix A-1, Section 2.1.2, Page 2 of 9 for this requirement.

SSGS Spray Pump Area (GPU 2005g)

1. Section 1.0, Page 2 of 16—There is a typographical error in the first sentence of the second paragraph that notes nine survey units when the FSSR only applies to four.

2. Section 8.0, Page 37—The first item in this section states that the "average residual radioactivity on the surfaces is less than the derived surrogate DCGLw in all the survey

units." The average should be compared to the AL rather than the $DCGL_W$. This comment also applies to the second item in this section.

3. Appendix A, Attachment 2-1—Were the three instrument/probe combinations noted as having an instrument conversion factor/efficiency less than 208,302 cpm/mR/h used during the FSS? Refer to Appendix A, Section 2.2.2, Page 3 of 10 for this requirement. This comment also applies to Appendix B, Attachment 2-1.

REFERENCES

GPU Nuclear, Inc. (GPU). Saxton Nuclear Experimental Corporation Facility License Termination Plan. Saxton, Pennsylvania; Revision 3, February 2004.

GPU Nuclear, Inc. FSS Report – CV Yard Excavation. Saxton, Pennsylvania; July 26, 2005a.

GPU Nuclear, Inc. FSS Report – Open Land Area – OL1. Saxton, Pennsylvania; July 26, 2005b.

GPU Nuclear, Inc. FSS Report – OL1 Residual Concrete. Saxton, Pennsylvania; July 27, 2005c.

GPU Nuclear, Inc. FSS Report – Penelec Switch Yard Control Building. Saxton, Pennsylvania; July 14, 2005d.

GPU Nuclear, Inc. SNEC Procedure E900-IMP-4520.04, *Survey Methodology to Support SNEC License Termination*, Revision 11. Saxton, Pennsylvania; May 24, 2005e.

GPU Nuclear, Inc. FSS Report of OL6 and OL10. Saxton, Pennsylvania; July 14, 2005f.

GPU Nuclear, Inc. FSS Report – SSGS Spray Pump Area. Saxton, Pennsylvania; July 27, 2005g.

U.S. Nuclear Regulatory Commission (NRC). Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). Washington, DC; NUREG-1575; Revision 1, August 2000.