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OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

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Mr. John Hickman
Division of Waste Management
and Environmental Protection
U.S. Nuclear Regulatory Commission
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**SUBJECT: IN-PROCESS INSPECTION CURSORY SURVEY RESULTS FOR THE
PRIMARY AUXILIARY BUILDING REMAINING WALLS AT THE
YANKEE NUCLEAR POWER STATION, ROWE, MASSACHUSETTS
[DOCKET NO. 50-29; RFTA NO. 05-008]**

Dear Mr. Hickman:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) performed in-process inspection cursory survey activities on the remaining Primary Auxiliary Building (PAB) walls at the Yankee Nuclear Power Station in Rowe, Massachusetts on September 14, 2005. These survey activities were requested by the U.S. Nuclear Regulatory Commission (NRC) site representative while ESSAP was performing in-process confirmatory survey activities of the Reactor Support Structure (RSS) Concrete Base. The survey activities included beta surface scans and direct measurements for total net beta activity. Enclosed are the in-process cursory survey results documenting these survey activities.

If you have any questions or comments, please direct them to me at (865) 576-0065 or Scott Kirk at (865) 574-0685.

Sincerely,

Wade C. Adams

Wade C. Adams
Health Physicist/Project Leader
Environmental Survey and
Site Assessment Program

WCA:ar

Enclosure

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**IN-PROCESS INSPECTION CURSORY SURVEY RESULTS
FOR THE PRIMARY AUXILIARY BUILDING REMAINING WALLS
AT THE YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS**

INTRODUCTION

The U.S. Nuclear Regulatory Commission (NRC) site representative requested that the Oak Ridge Institute for Science and Education's (ORISE) Environmental Survey and Site Assessment Program (ESSAP) perform an in-process inspection cursory survey of the Primary Auxiliary Building (PAB) remaining concrete walls at the Yankee Nuclear Power Station (YNPS). The in-process inspection cursory surveys were performed on September 14, 2005. Figures 1 through 4 indicate the portions of the remaining walls that were part of these survey activities.

PROCEDURES

An in-process inspection cursory survey plan was not prepared for these survey activities since this was an on-site request by the NRC site representative. The ORISE/ESSAP Survey Procedures and Quality Assurance Manuals were followed for these activities (ORISE 2004 and 2005). Since this was an in-process cursory survey, the licensee did not have final status survey (FSS) data available for review but was able to provide preliminary direct measurement results to ESSAP.

Beta surface scans were performed using gas proportional detectors coupled to ratemeter-scalers with audible indicators. Surface scans were performed on up to 25% of the remaining wall structural surfaces. Particular attention was given to cracks and joints in the evaluated structural surfaces where material may have accumulated. Direct measurements for total net beta activity were performed at ten locations on the evaluated surfaces. Locations where direct measurements were taken are indicated on Figures 1 through 4.

DATA INTERPRETATION

Radiological data were returned to ESSAP's laboratory in Oak Ridge, TN for interpretation. Direct measurement data were converted to units of disintegrations per minute per 100 square centimeters (dpm/100 cm²).

FINDINGS AND RESULTS

Beta surface scans did not identify any areas of elevated activity on the remaining PAB wall concrete wall surfaces. Total net beta activity measurement results for the concrete structures ranged from 110 to 880 dpm/100 cm². All results were well within the respective derived concentration guideline levels (DCGLs) for Co-60 and Cs-137 as specified in the License Termination Plan [LTP (YAEC 2004)]. A complete listing of the surface activity level results is presented in Table 1.



Figure 1: Remaining PAB Wall — Direct Measurement Locations 1 through 5

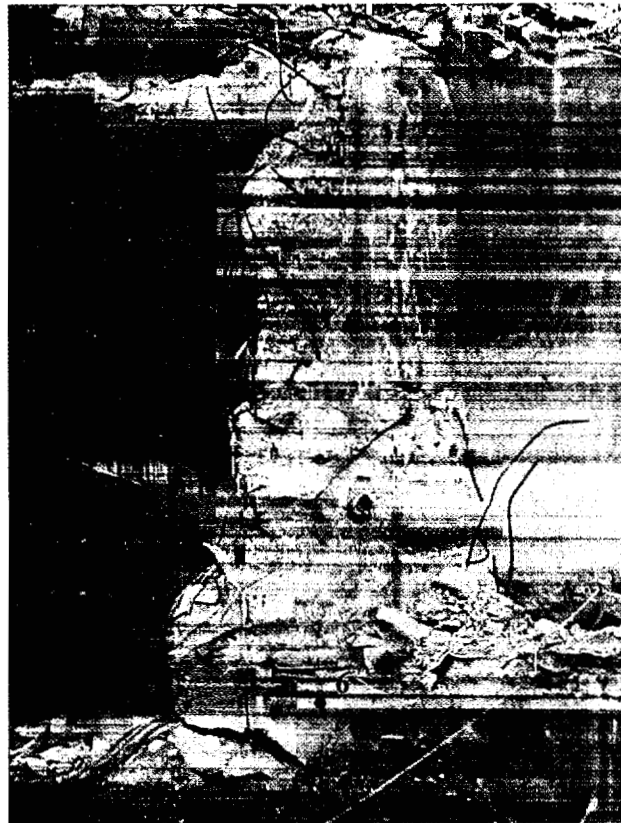


Figure 2: PAB Wall — Direct Measurement Location 6

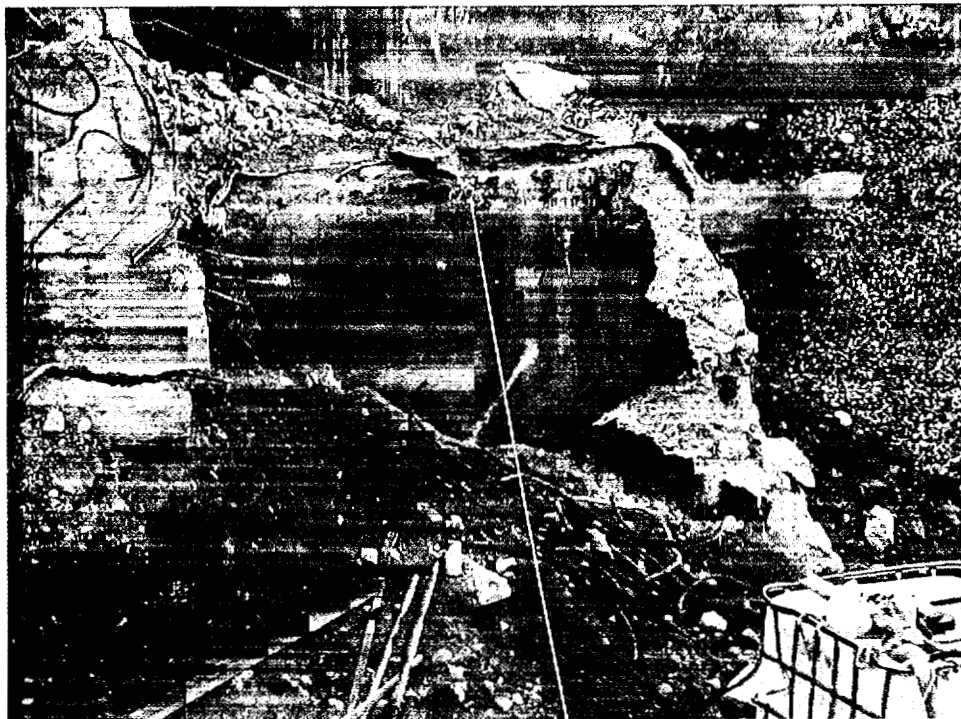


Figure 3: PAB Wall — Direct Measurement Location 7

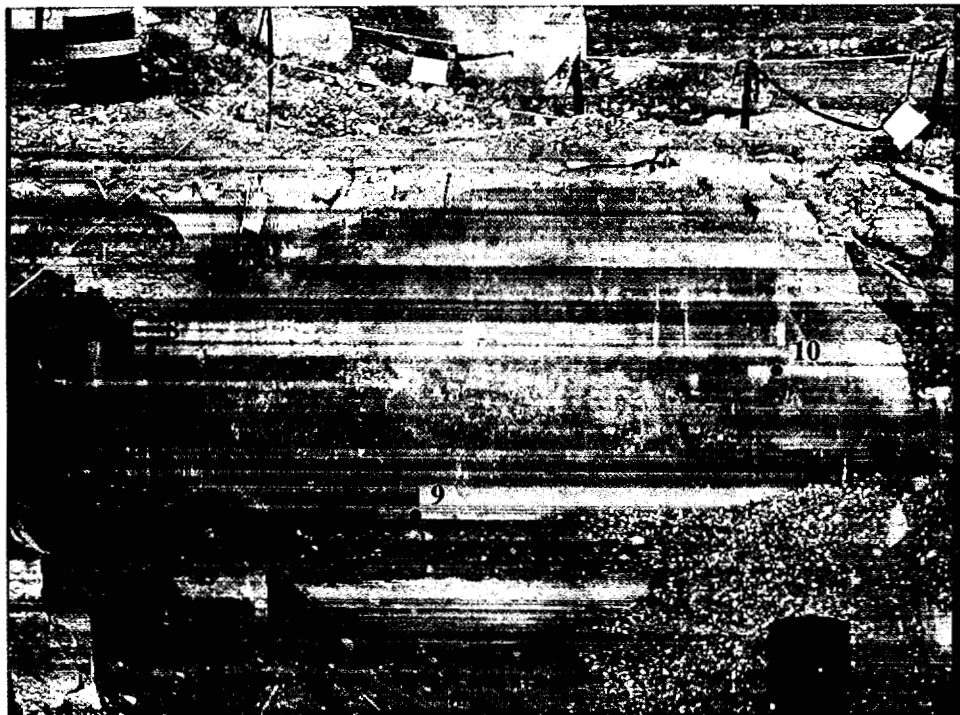


Figure 4: PAB Wall — Direct Measurement Locations 8 through 10

TABLE 1

**SURFACE ACTIVITY LEVELS
PRIMARY AUXILIARY BUILDING REMAINING CONCRETE WALLS
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS**

Survey Unit/Location^a	Total Net Beta Activity (dpm/100 cm²)
1	760 ± 380 ^b
2	880 ± 390
3	300 ± 360
4	460 ± 370
5	640 ± 380
6	150 ± 350
7	710 ± 380
8	560 ± 370
9	710 ± 380
10	110 ± 350

^aRefer to Figures 1 through 4.

^bUncertainties represent the 95% confidence level, based on counting statistics only.

REFERENCES

Oak Ridge Institute for Science and Education (ORISE). Survey Procedures Manual for the Environmental Survey and Site Assessment Program. Oak Ridge, Tennessee; September 2, 2004.

Oak Ridge Institute for Science and Education. Quality Assurance Manual for the Environmental Survey and Site Assessment Program. Oak Ridge, Tennessee; July 28, 2005.

Yankee Atomic Electric Company (YAEC). Yankee Atomic Electric Company (YAEC) License Termination Plan (LTP) for the Yankee Nuclear Power Station (YNPS). Revision 1. Rowe, Massachusetts; November 2004.