

## BNL ALARA Center Data Base

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### HEALTH PHYSICS SERVICES ON THE PLATFORM AT SALEM USING ROMMRS

**Keywords:** REMOTE SYSTEMS; ROMMRS; ROSA; ROBOTICS

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**Project Manager:**

**Objectives:** Describe the capabilities of the Remotely Operated Managed Maintenance Robotic System (ROMMRS) and its role in performing Health Physics (HP) tasks.

**Comments:** ROMMRS is a joint project of Public Service Electric and Gas Company (PSE&G) and Westinghouse Electric. The system will perform the Health Physics tasks for the primary side services planned for Steam Generators 12 and 14 at the Salem Nuclear Power Plant. The tasks to be performed at this outage with the system include: visual inspections, radiation surveys, vacuuming, wipe downs, area swiping, air sampling and equipment handling.

The robot is the ROSA I arm, slightly modified to be controlled from the ROSA III control system. The arm has 6 degrees of freedom and can be positioned anywhere within the 6 foot reach volume. It is mounted on a mobile base that travels on a triangular track with 2 degrees of freedom.

The video capabilities include two pan, tilt and zoom (PTZ) cameras and two end point cameras. The gamma radiation surveys are performed with a pair of Ebberline detectors. Beta radiation surveys are performed with a RO-2 meter.

**Remarks/Potential for dose limitation:** The long range vision for ROMMRS is 2 fold;

1) Reduce the radiation exposure to personnel through:

- Replacement or augmentation of HP services with robotics
- Replacement or augmentation of containment support worker services with robotics
- Track personnel exposure real time with the computer control system
- Plan tasks using a combination of the survey data base and the three dimensional control model

2) Increase the productivity of the containment maintenance services through:

- Use of the 3-D simulation to provide time-motion studies to optimize the service
- Use the 3-D simulation to optimize and refresh the personnel training
- Use the data base of industry wide experience to optimize the contingency management
- Closely couple health physics services and contract services to minimize conflicts

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**References:** Cruickshank, H., "Health Physics Services on the Platform at Salem Using ROMMRS," 1993 *Radiation Exposure Management Seminar*, Westinghouse, Pittsburgh, Pennsylvania, 1993.

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**Funding:** N/A

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