

## BNL ALARA CENTER

### Processes and Practices Related to Occupational Dose

ID: 1015

#### PHOTOGRAPHIC RECORDS OF PLANT AREAS AND COMPONENTS

**Keywords:** PHOTOGRAPH PLANT; PHOTOS; VIDEO INFORMATION; MAINTENANCE; TRAINING; DESIGN; PHOTOGRAPHIC RECORDS

#### Description:

Comprehensive photographic surveys of selected plant building areas using video or photographic information retrieval and processing systems are commercially available. These pictorial data bases have use in (a) maintenance and outage planning, (b) health physics operations and emergency response training, (c) orientation of new plant personnel or engineering groups, (d) visit and media information center, and (e) engineering design and modification. Typical areas photographed include the dry well, reactor building, turbine and rad waste buildings, and also detailed shots of specific equipment and features. Photographic information is stored in an optical video disk and is retrieved through use of a microcomputer programmed to provide simple user-friendly capability to travel throughout photographed areas. This tool provides unique capabilities to view radioactive areas without causing personnel exposures and therefore has important potential for dose control.

#### References and Selected Abstracts:

1. Dodd, A.M., and Perry, J.O., "Photographic Program of a BWR for ALARA." Proceedings of the Seventeenth Midyear Topical Symposium of the Health Physics Society, Pasco, Washington, February 5-9, 1984). pp. 7. 109-7. 115.

**Abstract:** High radiation areas have often been photographed in commercial nuclear plants to identify radiation sources and equipment so workers having to go into the areas become familiar with them prior to entering. This helps minimize the workers' time in a high radiation area and is useful as a visual aid in training. Previous problems encountered in using this type of file included indexing, storing for long-term use, and reproducing photos for use in the field. At WNP-2, a program has been adopted from Aerojet of Idaho where negatives from photographs are mounted on computer aperture cards. The cards are coded to identify the equipment, physical location in the plant, reference drawings, and other data. The aperture cards are reproduced using a process called Diaazo. The information is put in a data file that can be sorted by any field on the

card. A paper copy of the photo can be made in seconds on a machine similar to a dry silver copier, then mounted for training or maintenance purposes. The cost of duplicating the aperture cards and/or the paper copies is a fraction of that for reproducing color glossies. The computer data file provides cross-referencing to correlate the equipment with the photograph. The results are low cost, easy storage, and easy access to the photograph file. Using this program, several thousand photographs can be easily stored and used.

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2. Coon, K., "ALARA Valve/Component Locating Program," Radiation Protection Management, July 1984, p. 86.
3. Khan, T.A., Dionne, B.J., and Baum, J.W., "Data Base on Nuclear Power Plant Dose Reduction Research Projects," NUREG/CR-4409, pp. T-85 - 53 and T-141.
4. "Surrogate Tour System - The Uses Have Just Begun," Boston Edison Nuclear Newsbreak, Vol. 3, No. 5, April 1989.
5. "Surrogate Tour Users Newsletter," Vol. 1, No. 1, April 1989.
6. Johnson, C.P. et al., "Collective Radiation Exposure Task Force Report: Hope Creek Generating Station," April 1987, p. 53..