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July 11, 1985

Director, Office of Nuclear Reactor Regulation
Attention: Mr. George W. Knighton, Branch Chief
Licensing Branch No. 3
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Subject: Docket Nos. 50-206, 50-361 and 50-362
San Onofre Nuclear Generating Station
Units 1, 2 and 3

The attached responses are provided to the request for additional information as discussed with the staff on July 1, 1985. This information is submitted in support of our March 20, 1985, request for exemption to 10 CFR 20, Appendix A, footnote d-2(c) to allow credit for a protection factor when using the MSA GMR-I canister in atmospheres containing radioiodine.

If you have any questions regarding the enclosed information, please call me.

Very truly yours,

M. O. Medford

Enclosure

JRW:4517F

cc: Mr. J. A. Zwolinski, Branch Chief, Operating Reactors Branch No. 5
Mr. R. Dudley, NRR Project Manager, San Onofre Unit 1
Mr. H. Rood, NRC (to be opened by addressee only)
Mr. F. R. Huey, Senior Resident Inspector, SONGS
Mr. J. B. Martin, Regional Administrator, Region V

A001
1/1

bcc: J. C. Holcombe (SDG&E)
D. R. Pigott (Orrick, Herrington & Sutcliffe)
H. Peters (SDG&E)
V. C. Hall (CE)
H. F. McCluskey (Bechtel)
R. Shpall (Bechtel)
A. R. Watts (Rourke & Woodruff)
G. W. Hoyt (City of Anaheim)
F. Kray (City of Riverside)
Kenneth P. Baskin
Harold B. Ray
G. J. Bjorklund
H. E. Morgan
E. N. Cramer
D. E. Nunn
B. Katz
P. J. Knapp
D. P. Breig
J. M. Curran (2)
D. Heinicke
H. L. Richter
C. R. Kocher/J. A. Beoletto
R. W. Krieger
J. T. Reilly
R. M. Rosenblum
D. B. Shull
K. E. Slagle
M. O. Medford
P. A. Croy
E. S. Medling
S. D. Root
D. B. Schone
D. L. Cox
P. W. Smith
J. L. Rainsberry
A. C. Llorens
A. K. Jones
T. A. Mackey, Jr.
M. P. Short
B. Carlisle
J. R. Wray
G. D. Peckham
J. P. Albers
R. V. Warnock
J. Madigen
NRC Files
CDM Files

RADIOLOGICAL ASSESSMENT BRANCH - REQUEST FOR ADDITIONAL INFORMATION

Question:

471.1 The licensee submittal of March 30, 1985, indicates that an estimated 30% reduction in time and exposure can be realized from the exemption in completing tasks requiring respiratory protection. Provide estimated (or actual data) which indicate the benefit of using sorbent canisters with a protection factor of 50 in comparison to other methods, such as use of an air line respirator. This should include specific information for selected tasks, comparing dose rates, numbers of workers, work time, and total dose.

Response:

Comparison of
Self Contained Breathing Apparatus
or Airline Respirator
with Sorbent Canister

Task	Dose Rate (R/hr)	Task Time (man-hours) SCBA/Airline	Task Time (man-hours) Canister	Total Dose (man-rem) SCBA/Airline	Total Dose (man-rem) Canister	Dose Savings (man-rem)
1. Reactor Coolant Pump Removal, Rebuild, and Replacement	.030	100	50	3.00	1.50	1.50
2. Pressurizer Spray Valve Repacking	.050	42	28	2.10	1.40	0.70
3. Reactor Head Removal and Installation	.100	400	300	40.0	30.0	10.0
4. Fuel Shuffle	.002	1550	1035	3.10	2.07	1.03
5. Snubber Inspection	.004	1325	1000	5.30	4.00	1.30
6. ISI	.006	1100	833	6.6	5.00	1.6
7. Pressurizer Spray Valve Relocation (Design Change Package 774)	.008	12500	8750	100	70	30.0
Totals				160.10	113.97	46.13

Notes

(1) Man-rem estimates are based on similar jobs during initial Unit 2 refueling outage.
(2) DCP 774 will be done once during the life of the plant at this outage. This means 30 man-rem savings only available for this outage.
(3) Some jobs such as reactor head removal may be impractical to perform with SCBA OR breathing air because of the safety hazards associated with the location of the work.

Question:

471.2 Discuss the facility effort to eliminate the causes of high radioiodine levels. Outline the reasons for the high radioiodine levels in the reactor coolant system, as well as measures taken to keep the resulting occupational exposure ALARA. This should include a description of those formalized and routinely practiced operational techniques, engineering controls, and procedures used to preclude operations with faulty fuel (e.g. fuel quality assurance procedures), and those used to reduce the radiological impact of fuel defects which develop in the course of operations (e.g. fuel replacement, coolant cleanup).

Response:

The source of higher than expected levels of radioiodine in Unit 3 reactor coolant is leaking fuel. This source should be eliminated following the initial refueling outage. One third of the cycle one fuel elements will be removed and replaced in accordance with fuel management practices. The remaining fuel assemblies scheduled for reuse in cycle two will be sipped. Defective fuel elements will be reconstituted as necessary or replaced. In this manner, we plan to eliminate defective fuel as a source of high radioiodine in the reactor coolant system.

Pre-outage planning for this outage has identified a number of activities which will be performed in order to minimize airborne radioiodine in containment. Our outage schedule shows the following control measures and statements:

(a) begin mini-purge at end of Mode 1.
(b) recirculate containment atmosphere through containment atmosphere clean-up system charcoal filters very early in the outage.
(c) during Mode 3, maximize flow through the letdown Purification Ion Exchanger. Run system until RCS is less than 0.1 uCi/cc.

(d) begin Main Purge at Mode 5
(e) use local ventilation with charcoal filters
(f) extend use of purification ion exchanger past RCS system breach to control crud levels.
(g) slowly educt RCS to containment. The schedule acknowledges that the containment may be inaccessible for approximately 64 hours during this evolution.
(h) continuous decontamination to minimize iodine resuspension.

Question:

471.3 Provide a commitment that training programs will be modified and training will be conducted to instruct sorbent canister users and health physics personnel in the limitations for use of sorbent canisters, as well as their proper field use. Specific procedures should be identified for modification and/or development, and changes and training implemented prior to the use of protection factors with sorbent canisters under the proposed exemption.

Response:

The following procedures will be modified and training conducted regarding the proper use and limitations of radioiodine sorbent canisters prior to use of protection factors.

H.P. Procedure SO123-VII-2.0	Respiratory Protection Program
H.P. Procedure SO123-VII-2.5	Selection & Issue of Respiratory Protection Devices
H.P. Procedure SO123-VII-2.6	Inventory & Control of Respiratory Protection Equipment

Question:

471.4 Describe how vendor and licensee quality assurance and quality control will be verified for the canisters proposed for use under the exemption.

Response:

Sorbent canisters to be used in radioiodine atmospheres will only be purchased from Mine Safety Appliances Company. MSA Company is on our Supplier Commodity Approved List and is authorized for company purchases of health physics supplies. Upon receipt, each canister will be inspected and tested in accordance with Health Physics procedure SO123-VII-2.6, "Equipment Inventory and Control." This procedure was prepared to ensure proper storage and handling of the canister.

Question:

471.5 Discuss in general the methods to be employed at San Onofre to detect, limit, and control organic vapors which could affect respirator usage. This should include a discussion of sampling methods, technical specifications with related restrictions (e.g., for main HEPA filter banks), and administrative controls, such as those that preclude the presence or use of particular organic compounds during GMR-I usage.

Response:

The San Onofre Nuclear Generating Station (SONGS) Safety Group is responsible for determining the protection requirements for toxic and nuisance materials. An onsite Certified Industrial Hygienist follows NIOSH and California OSHA standards in identifying hazardous organic vapors. The NIOSH Manual of Analytical Methods, Vol. 1 thru 7, provides the sampling methodology used at SONGS. The station has the capability to sample toxic substances using drager tubes, impingers, charcoal and silica tubes, and utilizes a local laboratory service for analyses. This technical capability will be used in addition to administrative controls as applicable.

Safety-related ventilation filtration systems contain charcoal for radioiodine removal. Areas served by these ventilation systems include the Control Room and the Fuel Handling Buildings. Technical Specification 3/4.7.5 and 3/4.9.12 require measures to control organic vapor contamination of systems and tests to ensure system efficiency if painting, fire, or chemical releases in any area communicating with a safety-related ventilation unit occurs. Health Physics procedure S0123-VII-2.5, "Selection and Use of Respiratory Protection Devices", precludes the use of the MSA GMRI canister in the presence of organic solvent vapors. (e.g. paint vaors, freon, solvents).