UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 24, 1981

Docket No. 50-206
LS05-81-09-062

DISTRIBUTION:
~~Docket~~
NRC PDR
LPDR
TERA
NSIC
ORB#5 RF
DCrutchfield
SNowicki
HSmith
OELD
OI&E (3)
ACRS (10)
Gray File
EMcKenna

Mr. R. Dietch, Vice President
Nuclear Engineering and Operations
Southern California Edison Company
2244 Walnut Grove Avenue
Post Office Box 800
Rosemead, California 91770

Dear Mr. Dietch:

SUBJECT: SLIGHTLY CONTAMINATED BEACH SAND - SAN ONOFRE UNIT 1

Your letter dated July 16, 1981, requested approval to backfill a recently excavated pit that contained slightly contaminated sand at its bottom. The contamination was discovered on May 10, 1981, during a routine survey on the beach west of the San Onofre Nuclear Generating Station Unit 1 seawall. The contaminated sand was uncovered during construction of the beach walkway project outside of the seawall.

We have evaluated the contamination levels existing at the bottom of the pit and have found that they do not pose a significant hazard to the public health and safety and, therefore, backfilling is acceptable. The conclusions of the enclosed evaluation were provided to your staff by telephone so that backfilling could proceed.

Sincerely,

Original signed by
Dennis M. Crutchfield

Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing

Enclosure:
Evaluation

cc w/enclosure:
See next page

OFFICE	DL:ORB #5/PM	DL:ORB #5/C	DL:AD/SA				
SURNAME	Snowicki:rj	DCrutchfield	GCLainas				
DATE	9/24/81	9/24/81	/ /81				

cc w/enclosure:
Charles R. Kocher, Assistant
General Counsel
James Beoletto, Esquire
Southern California Edison Company
Post Office Box 800
Rosemead, California 91770

David R. Pigott
Orrick, Herrington & Sutcliffe
600 Montgomery Street
San Francisco, California 94111

Harry B. Stoehr
San Diego Gas & Electric Company
P. O. Box 1831
San Diego, California 92112

Resident Inspector/San Onofre NPS
c/o U. S. NRC
P. O. Box 4329
San Clemente, California 92672

Mission Viejo Branch Library
24851 Chrisanta Drive
Mission Viejo, California 92676

Mayor
City of San Clemente
San Clemente, California 92672

Chairman
Board of Supervisors
County of San Diego
San Diego, California 92101

California Department of Health
ATTN: Chief, Environmental
Radiation Control Unit
Radiological Health Section
714 P Street, Room 498
Sacramento, California 95814

U. S. Environmental Protection Agency
Region IX Office
ATTN: Regional Radiation Representative
215 Freemont Street
San Francisco, California 94111

Enclosure

EVALUATION OF CONTAMINATED BEACH SAND AT SAN ONOFRE

INTRODUCTION

By letter from Southern California Edison Company (SCEC)[1] to U.S. NRC dated July 16, 1981, SCEC requested approval to backfill a recently excavated pit that contained slightly contaminated sand at its bottom. The pit was originally excavated to remove contaminated sand. This enclosure provides an evaluation of potential hazard to the public health and safety resulting from backfilling the pit and leaving the slightly contaminated sand at its bottom. The sand removed from the pit with higher contamination levels has been transported to a waste disposal site.

We have evaluated the environmental consequences of this action on the basis of three different criteria and found in each case that it does not pose a hazard to the public health and safety. We, therefore, recommend approving the backfilling action proposed by SCEC.

EVALUATION

EPA Proposed Rule:

In the memorandum from K.P. Baskin to D.M. Crutchfield dated July 16, 1981, the average concentration of radiocesium-137 at the bottom of the pit was described as being less than 5.0×10^{-7} μCi/g. In telephone communication between Mr. Yuhas (Region V inspector) and W. Pasciak, the staff was informed that radiocesium-137 was the only measurable radionuclide at the bottom of the pit[2].

Current EPA proposed disposal standards for inactive uranium processing sites[3] stipulate environmental standards for cleanup of open lands. They apply specifically to average concentrations of radium-226, a radionuclide significantly more hazardous than Cs-137, attributable to residual radioactive material from any designated processing site and are not to exceed 5 pCi/g.

Since radium-226 is significantly more hazardous than Cs-137, and since the average levels of Cs-137 are about 10 times smaller than this limit for radium-226, this comparison suggests that the levels of Cs-137 at the bottom of the pit are not a significant hazard to the public health and safety.

Dose via Fish Consumption

In the July 16, 1981 memorandum noted above, it is stated that the total activity of Cs-137 in the sand at the bottom of the pit is about 50 to 200 micro-curies. A dose to humans can be estimated for the fish consumption pathway based on the assumption that the cesium diffuses into the ocean water through the ground. On the basis that the entire 200 micro-curies of Cs-137 reaches the ocean and is mixed into an area of about 1/4 square mile by 30' deep, and an individual consumes 20 kg of fishes from this area, the individual would receive a dose of less than 1 mrem, or about 1% of annual natural background (methods described in Regulatory Guide 1.109 were used for this estimate[4]).

A dose of 1 mrem is considered to be negligible as it is well below existing criteria for protection of the public from radiation doses, and suggests that the levels of Cs-137 at the bottom of the pit are not a significant hazard to the public health and safety.

External Dose Rate

In the July 16, 1981 memorandum noted above, it is stated that the exposure rate above the surface of the bottom of the pit is 5 micro-R per hour. After the pit is backfilled, the dose rate on the beach surface above the pit location will be negligible. Even if, however, the dose rate is the same on

the beach surface as it is at the bottom of the pit, a person would have to spend 8 hours a day for 300 days a year to receive a dose of 12 mrad per year. A dose of 12 mrad is about 12% of the natural background dose and within statistics of natural background fluctuation.

These low exposure rates expected after backfill is completed, suggest that these contaminants do not pose a significant public hazard.

CONCLUSION

The potential hazards to the public health and safety from the slightly contaminated sand at the bottom of the pit have been evaluated and found to be negligible. Therefore, we conclude that backfilling the pit without removal of the slightly contaminated sand at its bottom is acceptable.

REFERENCES

1. Letter from Southern California Edison Co. to U.S. NRC dated July 16, 1981.
2. Telephone conversation between Mr. Uhas (NRC Inspector) and W. Pasciak (RAB staff) on July 29, 1981.
3. EPA Proposed Rule for disposal standards for inactive uranium processing sites, 46 FR 2556-2563, January 9, 1981.
4. U.S. NRC Regulatory Guide 1.109 "Calculation of Annual Doses to Man From Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, Rev. 1, October 1977.