Southern California Edison Company

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November 2, 1982

Director, Office of Nuclear Reactor Regulation
Attention: D. M. Crutchfield, Chief
Operating Reactors Branch No. 5
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Subject: Docket No. 50-206
SEP Topic II-1.C
San Onofre Nuclear Generating Station
Unit 1

By letter dated September 17, 1982, we provided a complete assessment for SEP Topic II-1.C, Potential Hazards or Changes in Potential Hazards Due to Transportation, Institutional, Industrial and Military Facilities. This assessment was prepared based on information in the San Onofre Units 2 and 3 FSAR and a draft report from NUS Corporation which was identified as Reference D in our assessment.

Subsequent to submittal of our assessment, we received the final report from NUS entitled "Analysis of Hazards for Rail and Highway Transportation Routes near the San Onofre Nuclear Generating Station Unit 1," dated September, 1982. A copy of this report is enclosed. Based on this report the information on page 16 of our September 17 assessment has been updated and a revised page is enclosed. The revisions to this page do not change the conclusions of our September 17 assessment.

If you have any questions or require additional information, please let us know.

Very truly yours,

RWKrieger

R. W. Krieger
Supervising Engineer
San Onofre Unit 1 Licensing

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SEP

Enclosure

o	West edge of right-of-way	0.22
o	West edge of roadway	0.38
o	Center of roadway	0.24
o	East edge of roadway	0.16

Finally, a probability distribution for the yield of an explosion was derived. The results of this realistic analysis show that the probability of exceeding 0.5 psi is 2.09×10^{-6}.

Hydrogen and acetylene are also shipped past the plant as compressed gases in cylinders. The number of shipments and cylinder sizes are listed in Table 1.

BMCS data was searched for the period 1973 through 1977 to determine a loss of lading rate per accident for compressed gases in cylinders. Accidents included in the data were over-the-road (intercity) trips transporting hazardous materials. Accidents occurring on individual highways and exit and entrance ramps were also included. A total of 16 confirmed accidents with cylinders of flammable compressed gases were identified. By including non-flammable gases the number of accidents increased to 19. Two of the 19 accidents resulted in loss of lading giving a spill rate per accident of 0.105 spills/accident. Reviewing BMCS data for cryogenic truck accidents and spills as a result of accidents showed insufficient data to derive a parameter. Therefore the spills per accident for LPG tank trucks (.064 spills/accident) was assumed applicable for cryogenic tank trucks.

Reviewing the MTB data for severity of accidents involving flammable gases in cylinders and cryogenic gases revealed insufficient data to form fire and explosion rates given a spill. Therefore the parameters determined for LPG products were assumed applicable as follows:

Probability of explosion given a spill	=	0.042
Probability of fire given a spill	=	0.458
Probability of no fire or explosion given a spill	=	0.50

The annual probabilities of a plant overpressure of 0.5 psi or greater due to the detonation of a drifting cloud from an I-5 release of flammable gas are 3.75×10^{-8} for 260 shipments of 219 cubic feet hydrogen cylinders, 9.72×10^{-9} for 24 shipments of large hydrogen cylinders and 6.71×10^{-9} for 52 shipments of acetylene.

The analysis for delayed detonation of vapor clouds is conservative since it is very probable that escaping vapors will find an ignition source near the accident site. Car and truck traffic along I-5 would provide ample heat sources from hot manifolds and mufflers. Data for 81 vapor releases from tank cars indicated that 58% were ignited within 50 feet of the accident and all leaks found sources of ignition within 300 feet. The effect of bouyancy was neglected in the analysis. The probability of a flammable vapor cloud being swept into the plant was calculated for LNG, hydrogen and acetyline. The results are 1.03×10^{-8} for LNG, 7.1×10^{-9} for small hydrogen cylinders, 7.63×10^{-10} for large hydrogen cylinders, and 1.24×10^{-9} for acetylene.