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Rockwell International
Atomics International Division
ATTN: Dr. M. E. Remley
8900 De Soto Avenue
Canoga Park, California 91304

Gentlemen:

The purpose of this letter is to transmit for your information a revision to an increment of the analysis of the effects of natural phenomena relative to your plutonium fabrication operations at Chatsworth, California. The subject increment of analysis is the environmental character around your Chatsworth, California plant. The revisions include significant changes in demography and some minor changes in dispersion meteorology to our May 7, 1980 submittal to you. Please substitute the attached five revised pages for the similarly numbered pages previously transmitted.

Any questions you may have on the enclosed revisions should be addressed to James E. Ayer of this Branch, who will direct resolution of comments.

Sincerely,

Leland C. Rouse, Chief
Advanced Fuel and Spent Fuel
Licensing Branch
Division of Fuel Cycle and
Material Safety

Enclosures: Revised pages --
"Description of Site Environment";
Pages 2, 4, 6, & 7

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THIS DOCUMENT CONTAINS
POOR QUALITY PAGES

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DATE	5/18/80	5/18/80	6/18/80		

DESCRIPTION OF SITE ENVIRONMENT

This description provides basic information concerning the physical, biological, and cultural environment of the Atomic International (AI) facilities near Santa Susana, California.

1. SITE LOCATION

The AI facility of interest is Building 055 at the Nuclear Development Field Laboratory (NDFL) in Ventura County, California located on Burro Flats at $34^{\circ} 15' 15''$ N. latitude and $118^{\circ} 42' 45''$ W. longitude. Figure 1 shows the location of that facility relative to surrounding communities.

The NDFL facility is located in the Simi Hills of southeastern Ventura County, about 5 to 6 miles west of Canoga Park and about 29 miles northwest of downtown Los Angeles. The site comprises about 290 acres of varying topography in a relatively isolated mountain setting. The nearest communities are in the Simi Valley about 3 miles north of the site. Immediately adjacent to the site is the Rocketdyne-Santa Susana Field Test Laboratory (SSFL).

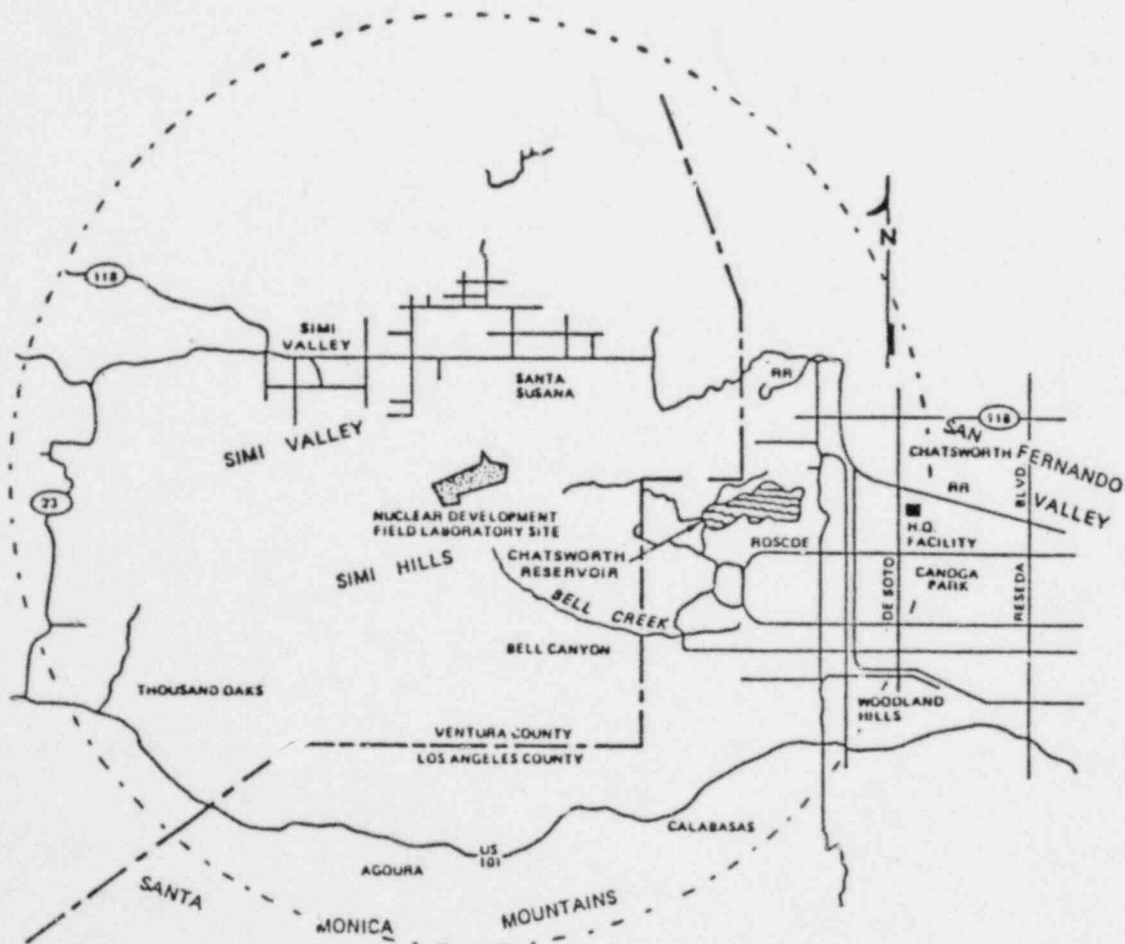


Figure 1. Map of the Atomic International Facility and surroundings within a 5-mile radius.

Figure 2 provides an aerial view of the NFDL site. The valley in the left background is the Simi Valley. The area in the far right background is the western end of the San Fernando Valley.

2. DEMOGRAPHY

The 1980 projected population distribution near the NFDL is shown in Table 1. Approximately 110,000 persons are estimated to live within a 5-mile radius of the NFDL facility; the nearest resident lives 1.3 miles from the site. The population distribution centered on the NFDL, out to a radius of 50 miles of the AI facility is shown in this Table.

TABLE 1

AI ROCKWELL POPULATION DISTRIBUTION
WITHIN 50 MILES OF NFDL (1980 EST.)

	<u>0-1</u>	<u>1-2</u>	<u>2-3</u>	<u>3-4</u>	<u>4-5</u>	<u>5-10</u>	<u>10-20</u>	<u>20-30</u>	<u>30-40</u>	<u>40-50</u>
N	0	4	690	3,642	8,694	210	1,150	535	781	304
NNE	0	0	86	4,002	1,153	131	2,241	870	825	822
NE	0	0	115	4,318	3,310	7,045	11,572	21,662	5,220	41,587
ENE	0	0	0	676	820	4,277	47,051	4,338	4,000	18,925
E	0	0	0	892	5,613	22,408	341,737	188,251	147,971	89,996
ESE	0	0	0	72	9,644	65,555	272,816	811,904	1,075,509	834,921
SE	0	0	58	303	7,774	32,012	50,693	585,058	1,042,501	811,545
SSE	0	20	14	0	360	2,384	10,165	0	38,612	12,422
S	0	0	0	29	130	1,465	1,912	0	0	0
SSW	0	0	0	0	2,995	3,604	2,928	0	0	0
SW	0	0	0	0	892	6,871	3,194	0	0	0
WSW	0	0	0	0	0	35,903	19,615	37,296	0	0
W	0	0	0	0	0	5,809	33,993	158,872	26,144	0
WNW	0	0	0	2,692	4,644	1,778	11,548	22,460	24,688	13,578
NW	0	43	4,894	9,961	9,356	1,740	5,731	5,856	793	117
NNW	0	0	4,606	12,666	3,527	13	7,116	54	69	1,018
Total	0	67	10,463	39,253	58,932	191,205	824,182	1,837,156	2,367,113	1,825,235

Total = 7,153,606

3. LAND USE

The NDFL is located in southeastern Ventura County near the crest of the Simi Hills at the western border of the San Fernando Valley. The Simi Hills have never supported intensive farming or development because the terrain is too rugged and rocky. Today, about 73% of the area in a 5-mile radius of NDFL is undeveloped (Table 2). The closest residence is about 1.25 miles south-southeast of Building 005 of the NDFL. Dense residential development begins in the San Fernando Valley about 3-1/2 miles east of Building 005. Homes are rapidly replacing the farms located there (Table 2). Sweet corn and hay for nearby pleasure horses appear to be the primary crops. Other truck farms occur in the Simi Valley, 3 miles north, and in the Thousand Oaks Area, 9 miles southwest of the site.

Table 2 Land use in 5-mile radius of NDFL

Land use	Percent of total area (78.5 sq miles)
Agriculture (including livestock and crops)	0.1
Commercial	0.4
Industrial	<0.1
Residential	26.6
Unused raw land	72.9
Total	100.0

Source: Rockwell International, Atomic International Division, Answers to "Questions Relative to Environmental Reports of Atomic International's Nuclear Fuel Facilities at Los Angeles, California," Canoga Park, Calif., December 1978, Question 11, Table 4.

According to a vegetation map drawn in 1931 of western Los Angeles County and southeastern Ventura County¹ (Figure 3), the area at that time consisted of about 31% farm and urban land. It is apparent from the map that almost all this land exists in the San Fernando Valley. Today, agriculture (including livestock) covers about 0.1% of the area in a 5-mile radius of the Headquarters site (Table 2).

During a site visit, the staff noted a few acres of immature avocado orchards and one apiary both on private land immediately adjacent to NDFL. Data on prime or unique farmlands² in the region which could be affected by the AI facility were not available. The NDFL site contains no farmland of any type, nor does it introduce effluents that could threaten farm products; thus, the data omission is not considered important.

Reservoirs existing near the site are used primarily for irrigation, flood control, and recreation. Chatsworth Reservoir, 4 miles east of Building 055, is currently dry, and it is expected to remain so until a decision is made and implemented to replace the present earthen dam with the required reinforced concrete structure. Supplemental city water supplies are drawn from the Van Norman Reservoir (8 miles east-northeast) and the Encino Reservoir (8 miles southeast).

Santa Ana winds are frequent (about 21% of all hours) at the site and are caused by centers of high pressure to the north and northeast of the site. Winds at the site during Santa Ana conditions are typically from the NE and usually are quite strong [all but two of the 191 hours with wind speeds > 8.7 mps (17 kts) at the site in 1976 occurred during Santa Ana conditions.] A gust of 31.9 m/s (62 kts) was recorded on the site during Santa Ana conditions.

4.4 Dispersion Characteristics of the Site

Atomics International has supplied one year (1976) of onsite wind speed and direction data. Wind speed and direction are measured by an Aerovane at 5 m (15 ft) above grade on the ridge line of Simi Hills about 3 km (2 mi) east of the NDFL building. Wind direction is measured by eight compass points.

Table 3 is a joint frequency distribution of wind speed by wind direction for 1976. The data shows a high frequency of calm and variable wind conditions (20.1%). Of the 6949 hours of measurable wind, 5888 hours (85%) were from only three directions: NE, SE and NW. In many cases, there was a wind shift during the hour preceding a hourly wind recording; wind speed and direction tabulated for that hour in Table 3 was the one with the lower wind speed (a conservative assumption). Winds too light to measure or maintain a valid wind direction trace due to instrument response were tabulated as "calm" or "variable" on the data sheets and listed as "calm" in the tables below.

The AI weather observer recorded on his logs the presence or absence of Santa Ana conditions. Tables 4 and 5 are joint frequency distributions of the occurrence of Santa Ana or non-Santa Ana conditions during the day and night hours. As expected, almost all winds (> 11 kts) and most NE winds occur during Santa Ana conditions. Also shown in the tables is the high frequency of calms at night.

4.5 Stability Class

No onsite measurement of atmospheric stability is available; the stability class at the site under most conditions would be different from that measured at the Burbank Airport. Therefore, a "synthetic" stability classification procedure was developed by meteorologists from NRC, ANL and AI to provide a more accurate estimate of dispersion.

The data were first stratified into the four subsets listed above and tabulated in Tables 4 and 5. Class C (slightly unstable) stability class was assumed for nighttime Santa Ana conditions, and 50% Class A and 50% Class B for daytime Santa Ana conditions. These classes reflect rapid dispersion rates occurring during such air flow.

For non-Santa Ana conditions, stability class selection depended on time of day and wind speed, according to the following criteria:

NIGHT

Wind Speed (m/s)	Class(es)
Calm	F, G
0.5-3.1	F, G
3.7-5.1	D, E
\geq 5.7	D

DAY

Calm	B, C
0.5-3.1	B, C
3.7-5.1	B, C
\geq 5.7	C, D

(where two classes are listed, 50% frequency of occurrence were assigned to each).

The classes selected should result in somewhat conservative (that is, relatively high) concentration values.

Tables 5a-5g are joint frequency tables of wind speed and direction by stability class. The stability classification technique release used leads to some unusual distributions.

For example, Class A was assumed to occur only with Santa Ana winds. However, in the real atmosphere, this class occurs during the day with light winds and intense insolation). The frequencies of Classes D and E (neutral and weak-stable) are very low, 2.4% and 1.4% respectively. Unstable conditions (Classes A, B and C) have a very high frequency (55.4%), reflecting good dispersion conditions at this elevated site which is usually above the subsidence inversion, and exposure to Santa Ana winds.

4.6 Relative Concentration Values

Table 6 shows the distribution of relative concentrations (x/Q) at various locations around the site, based on the data from Table 5 and the NRC's XQQDOQ program.⁵ Although the wind distribution is trimodal (Tables 3, 4, and 5) the x/Q values are bimodal, with large values to the NW and SE. Although NE winds occur 13.7% of the time, the calculated x/Q values SW of the site are relatively low. The majority of winds from the northeast occur with Santa Ana conditions, when wind speeds are above average and dispersion rates are high.