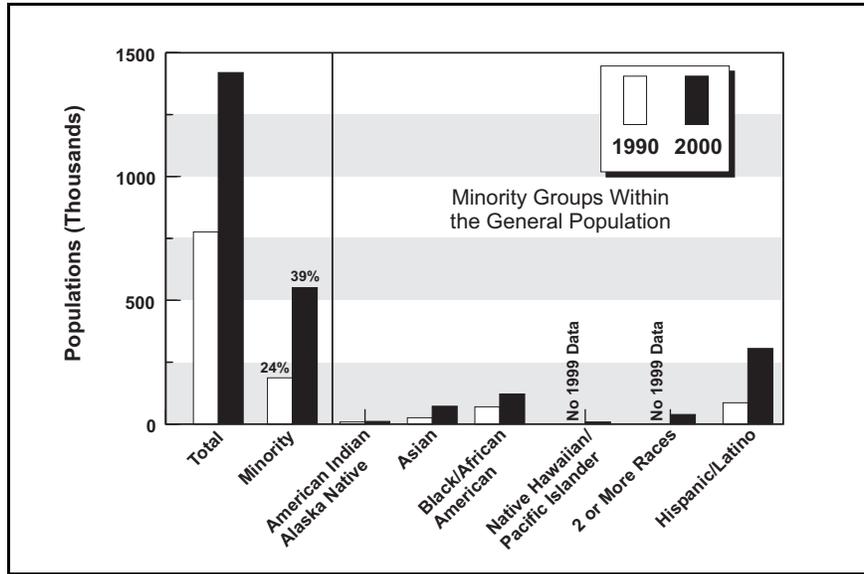


Races” were less than three percent of the total population of these counties in 2000, the overestimate is relatively small.

**Figure E–15** compares Census 2000 data with that for 1990 (to the extent that the data can be compared). There several reasons that minority data from Census 1990 cannot be directly compared with Census 2000 data. During the 1990 Census, Asian and Pacific Islanders were counted together in a single category. However, during Census 2000, “Native Hawaiian and Other Pacific Islander” and “Asian” were separate responses (selection of either one or both was an option). As a result, the 1990 population composed of Native Hawaiian and Other Pacific Islanders cannot be identified as a population distinct from Asians. In addition, during the 1990 Census, respondents were asked to designate themselves as members of only a single race. During Census 2000, respondents could select any combination of all of the six single race categories. As indicated in Figure E–15, there is no multiracial data available from the 1990 Census.



**Figure E–15 Comparison of Potentially Affected County Populations near DAF in 1990 and 2000**

Bearing in mind the changes in racial categories and enumeration that occurred between the 1990 Census and the 2000 Census, the following approximate comparison can be made. In the decade from 1990 to 2000, Nevada was the fastest growing state in the U.S. The minority population in potentially affected counties increased from approximately 24 percent to 39 percent. The Hispanic or Latino population of these counties more than tripled during the past decade, and the Asian population of those counties nearly tripled during the same decade. Nearly 70 percent of the population of the State of Nevada was found to reside in the Las Vegas metropolitan area of Clark County during Census 2000. Populations shown in Figure E–15 largely reflect the racial and Hispanic composition of Clark County.

**Figure E–16** shows the geographical distribution of minorities residing near the DAF in 1990 using block group resolution. Shaded block groups shown in Figure E–16 indicate that the percentage minority population residing in those block groups exceeded that for the nation and State of Nevada as a whole. **Figure E–17** shows the geographical distribution of the low-income population residing near the DAF. In 1990, approximately 13 percent of the nation’s resident population reported incomes below the poverty threshold, and approximately 10 percent of Nevada’s population was composed of low-income individuals. Shaded block groups in Figure E–17 indicate that the percentage low-income population residing in those block groups was more than national and state percentages of low-income residents.

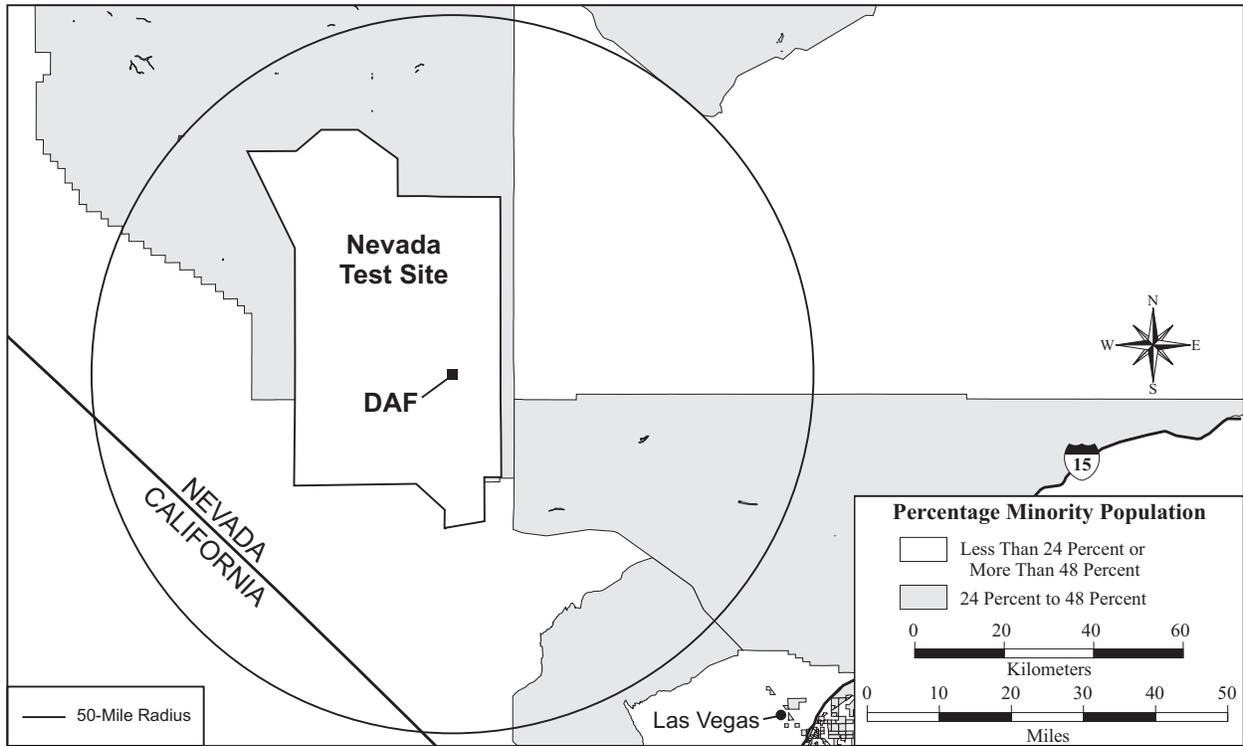


Figure E-16 Geographical Distribution of the Minority Population Residing near the DAF

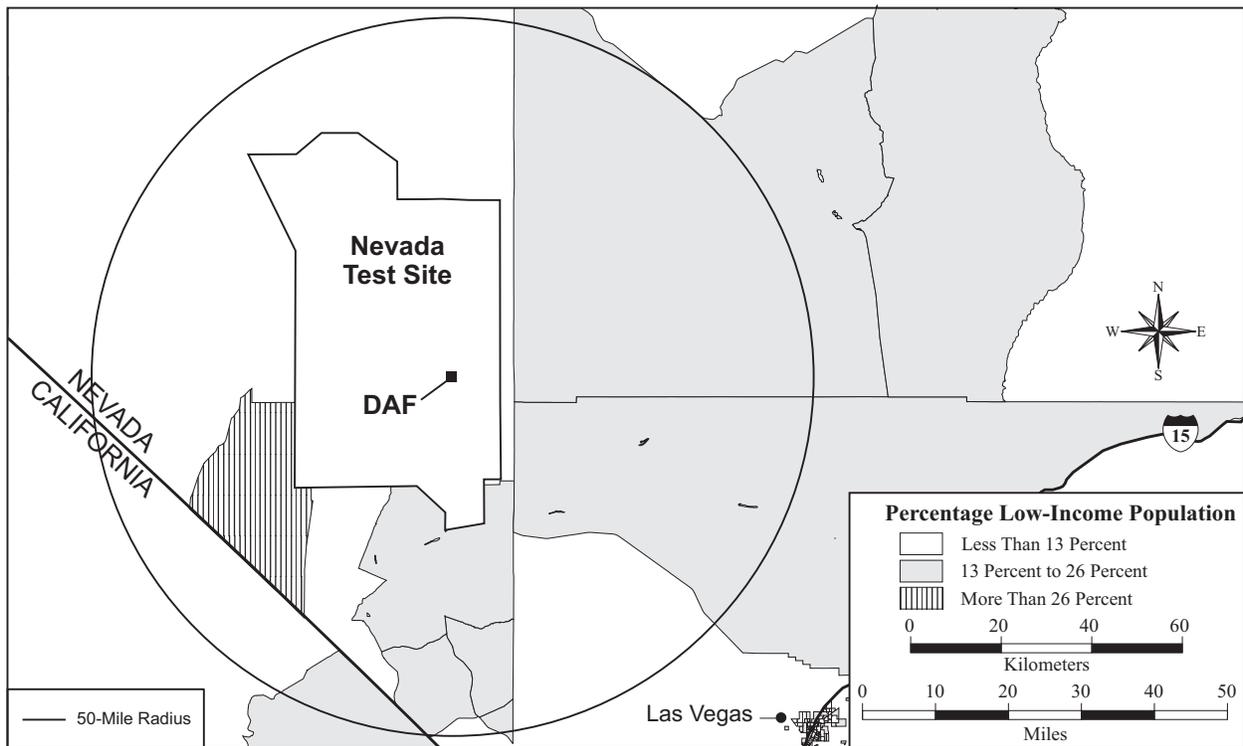
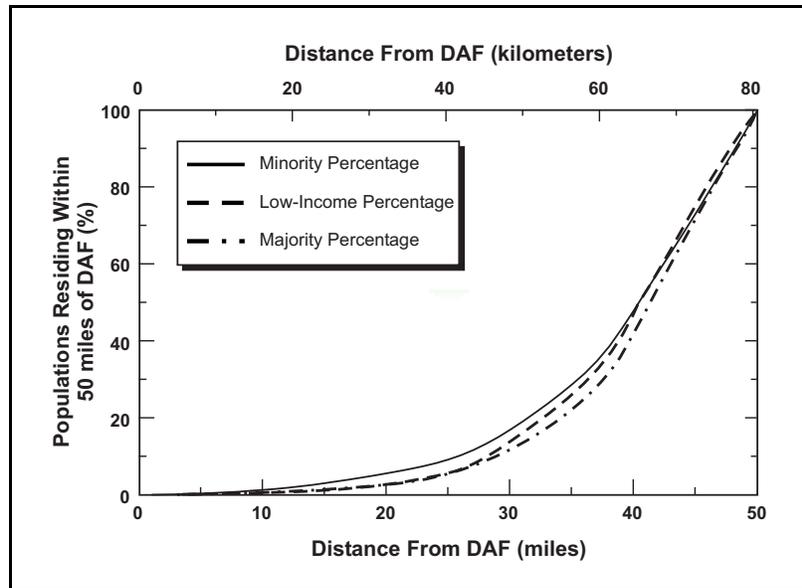


Figure E-17 Geographical Distribution of the Low-Income Population Residing near the DAF

Approximately 1,710 minority individuals and 1,345 low-income persons resided within 80 kilometers (50 miles) of the DAF in 1990. **Figure E-18** shows the cumulative percentage of these populations residing at a given distance from the DAF. For example, approximately 6 percent of the total minority population of 1,710 resided within 32 kilometers (20 miles) of DAF, and approximately 3 percent of the total low-income population of 1,345 resided within 32 kilometers (20 miles) of DAF. Curves representing potentially affected minority (solid line), low-income (dashed line), and majority populations (dot-dash line) in Figure E-18 are similar in shape. There are no major metropolitan areas in the potentially affected area. All three curves increase at approximately the same rate as the distance approaches that for the Las Vegas metropolitan area.



**Figure E-18 Cumulative Percentage Population Residing within 80 Kilometers (50 Miles) of DAF**

There are no major metropolitan areas in the potentially affected area. All three curves increase at approximately the same rate as the distance approaches that for the Las Vegas metropolitan area.

### Impacts of Construction on Minority and Low-Income Populations

Construction of new facilities at the DAF would occur under implementation of the NTS Alternative. As discussed throughout Section 5.4, construction impacts at the DAF would be small and would not be expected to extend beyond the boundary of NTS. Construction activities at the DAF would have little or no impact on the surrounding minority and low-income populations.

### Impacts of Normal Operations on Minority and Low-Income Populations

As discussed in Section 5.4.10.1, incident-free operations at DAF would result in the activation of 10 curies per year of the radionuclide argon-41. Argon-41 is a colorless, inert gas with a half-life of approximately one hour and 48 minutes. The expected number of latent cancer fatalities that would result from external exposure to argon-41 among the general public surrounding NTS would be approximately  $4 \times 10^{-8}$ . No internal dose, either from ingestion or inhalation of argon-41, would result from normal operations at DAF. Therefore, normal operations conducted under the NTS Alternative would not pose a significant radiological risk to resident minority or low-income populations.

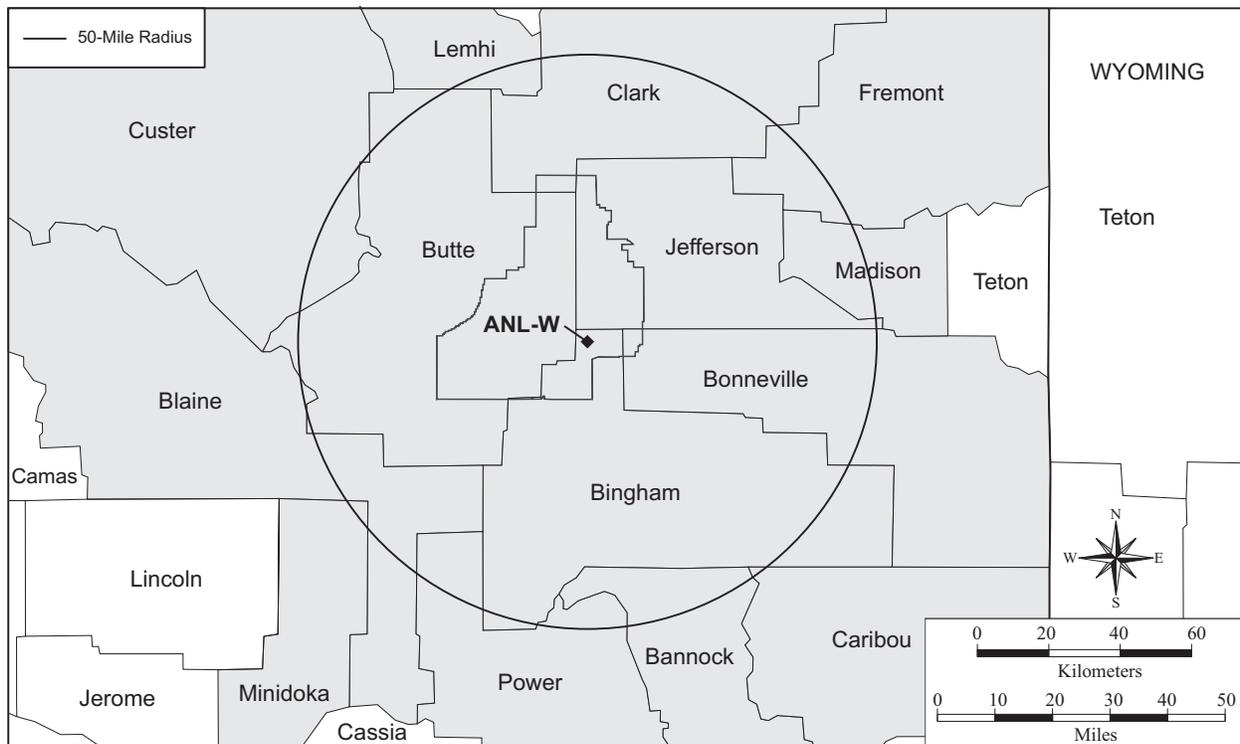
### Impacts of Accidents on Minority and Low-Income Populations

In terms of radiological consequences and risk to the offsite population, the most severe accident among those evaluated in this EIS would result in a high pressure spray fire at DAF (Section 5.4.10.2 of Chapter 5). All accident risks to any member of the public are essentially zero. Hence, none of the postulated accidents would pose a significant radiological risk to the public, including minority and low-income individuals and groups within the population at risk.

As discussed in Section C.2 of Appendix C, consequences due to accidents were calculated with the MACCS2 Model. This model evaluates doses due to inhalation of aerosols, such as respirable plutonium, and exposure to the plume. Longer term effects including resuspension/inhalation and ingestion of contaminated crops, wildlife, and fish are not included in the calculation. Such effects are largely controllable through interdiction. In order to conservatively estimate the radiological dose due to inhalation, the deposition velocity was set equal to zero during the MACCS2 calculations. Radioactive materials that would be deposited on surfaces remained airborne and available for inhalation. Given the rarity of accidents that could impact offsite individuals and the conservatism in the calculations of inhaled dose, implementation of the NTS Alternative would not be expected to pose a significant radiological risk to resident low-income or minority populations, including low-income and minority groups that depend upon subsistence consumption of locally grown crops and wildlife.

#### E.5.4 Argonne National Laboratory-West (ANL-W)

Under the ANL-W Alternative, security Category I/II activities currently conducted at TA-18 would be relocated to the vicinity of the Fuel Manufacturing Facility (FMF) and its environs at ANL-W. Security Category III/IV activities would remain at LANL. **Figure E-19** and **Table E-4** show the counties at radiological risk and the composition of the populations of these counties, respectively. The counties are: Bannock, Bingham, Blaine, Bonneville, Butte, Clark, Caribou, Custer, Fremont, Jefferson, Lemhi, Madison, Minidoka, and Power.



**Figure E-19 Potentially Affected Counties near ANL-W**

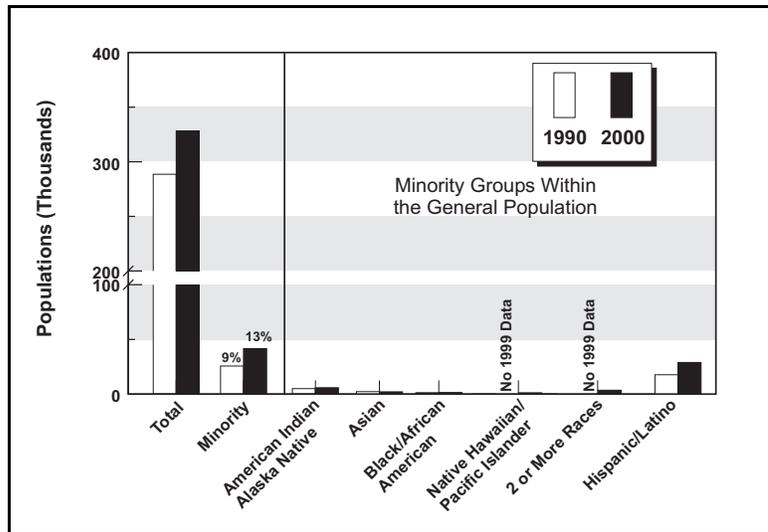
Data shown in Table E-4 reflects the results of Census 2000. The Hispanic or Latino population shown in Table E-4 includes persons of any race who designated themselves as having Hispanic or Latino origins. Populations for each race shown in the last seven rows of Table E-4 did not characterize themselves as having Hispanic or Latino origins. As discussed in Section E.2 above, persons indicating that they were multiracial are included in the estimate of the minority population given in the second row of the table.

Approximately two percent of the total U.S. population selected two or more races during the 2000 Census. Of those, approximately one-third selected “White” and “Some Other Race.” Since “White” and “Other Race” are not included in the CEQ’s current definition of minority races (CEQ 1997), the minority population shown in Table E-4 is overestimated. However, since non-Hispanic persons in the group “Two or More Races” were less than 2 percent of the total population of these counties in 2000, the overestimate is relatively small.

**Table E-4 Populations in Potentially Affected Counties Surrounding ANL-W in 2000**

<i>Population Group</i>	<i>Population</i>	<i>Percentage of Total</i>
Total	328,339	100.0
Minority	41,547	12.7
Hispanic/Latino	28,950	8.8
Black/African American	990	0.3
American Indian/Alaska Native	5,702	1.7
Asian	2,125	0.6
Native Hawaiian/Pacific Islander	277	0.1
Two or More Races	3,503	1.1
Some Other Race	225	0.1
White	286,567	87.3

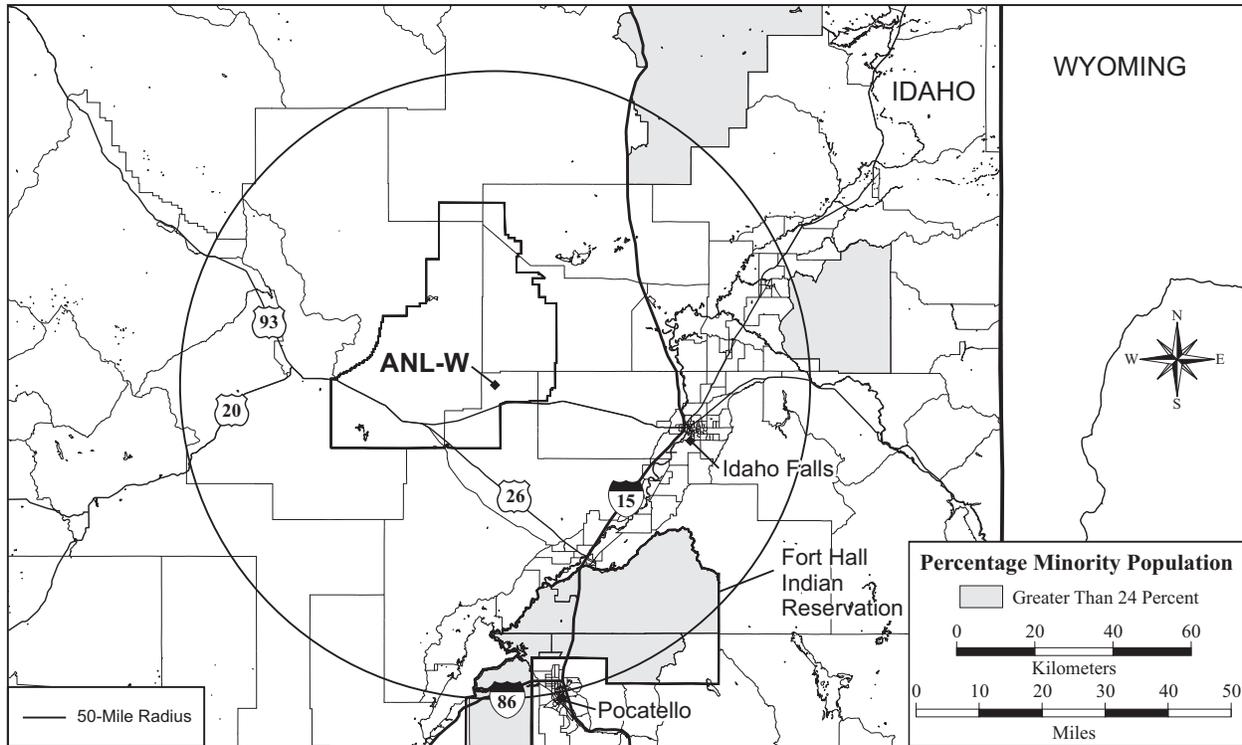
**Figure E-20** compares the 2000 Census data with that for 1990 (to the extent that the data can be compared). There are several reasons that minority data from Census 1990 cannot be directly compared with Census 2000 data. During the 1990 Census, Asian and Pacific Islanders were counted together in a single category. However, during Census 2000, “Native Hawaiian and Other Pacific Islander” and “Asian” were separate responses (selection of either one or both was an option). As a result, the 1990 population composed of Native Hawaiian and Other Pacific Islanders cannot be identified as a population distinct from Asians. In addition, during the 1990 Census, respondents were asked to designate themselves as members of only a single race. During Census 2000, respondents could select any combination of all of the six single race categories. As indicated in Figure E-20, there is no multiracial data available from the 1990 Census.



**Figure E-20 Comparison of Potentially Affected County Populations near ANL-W in 1990 and 2000**

Bearing in mind the changes in racial categories and enumeration that occurred between the 1990 Census and Census 2000, the following approximate comparison can be made. In the decade from 1990 to 2000, the minority population in potentially affected counties increased from approximately 9 percent to 13 percent. This is commensurate with characteristics of the State of Idaho. In the same decade, the percentage minority population of Idaho increased from approximately 8 percent to 12 percent.

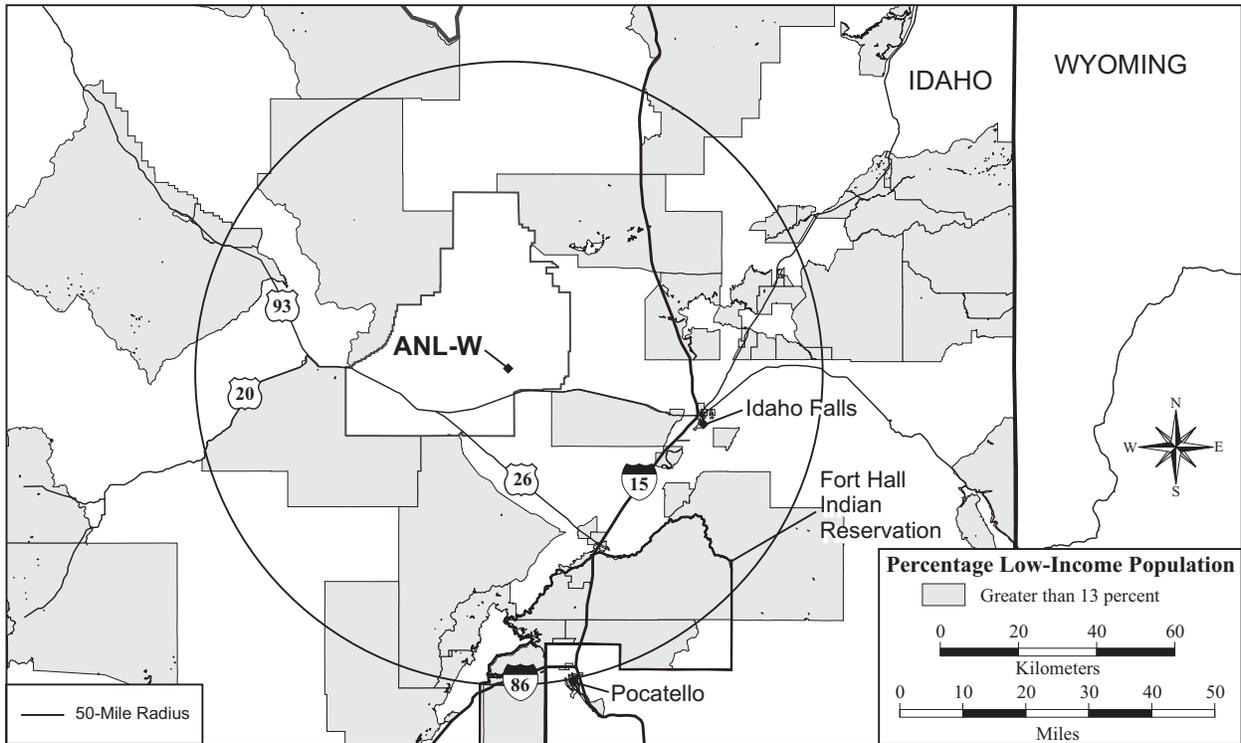
**Figure E-21** shows the geographical distribution of minorities residing near ANL-W in 1990 using block group resolution. Shaded block groups shown in Figure E-21 indicate that the percentage minority population residing in those block groups exceeded that for the nation as a whole and was more than three times the percentage minority population for the State of Idaho.



**Figure E-21 Geographical Distribution of Minorities Residing near ANL-W**

**Figure E-22** shows the geographical distribution of the low-income population residing near ANL-W in 1990. In 1990, approximately 13 percent of the nation’s resident population reported incomes below the poverty threshold, and approximately 13 percent of Idaho’s population was composed of low-income individuals. Shaded block groups in Figure E-22 indicate that the percentage low-income population residing in those block groups exceeded that for Idaho and the nation.

A total of approximately 15,691 minority individuals and 25,045 low-income persons resided within 80 kilometers (50 miles) of ANL-W in 1990. **Figure E-23** shows the cumulative percentage of these populations residing at a given distance from ANL-W. For example, approximately 2 percent of the total minority population and approximately 1.5 percent of the total low-income population resided within 32 kilometers (20 miles) of FMF. The curve representing percentages of minority residents (solid line in Figure E-23) increases steadily throughout the potentially affected area. The percentage of low-income residents (dashed line) and majority residents (dot-dash line) rise sharply near the outskirts of the Cities of Idaho Falls and Pocatello. Less than 1 percent of the minority population (92 minority individuals) and low-income population (70 low-income individuals) reside within 16 kilometers (10 miles) of FMF.



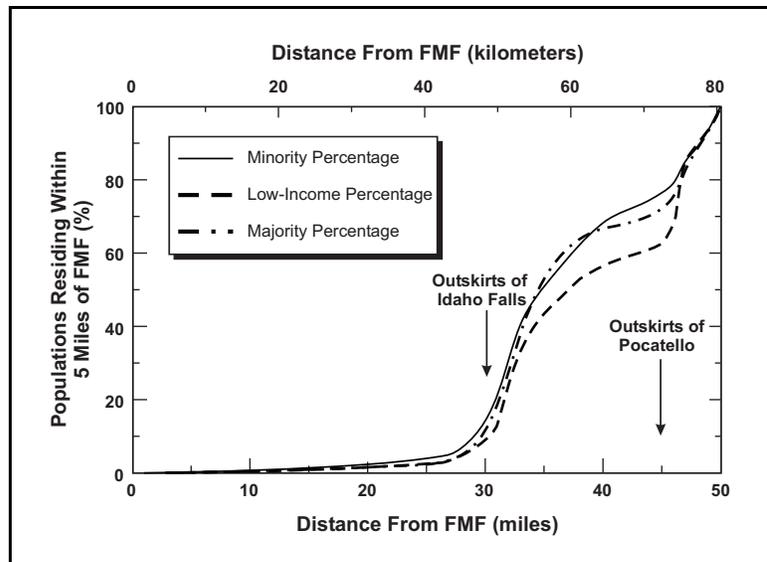
**Figure E-22 Geographical Distribution of Low-Income Populations Residing near ANL-W**

**Impacts of Construction on Minority and Low-Income Populations**

Modification of existing facilities and construction of new facilities at ANL-W would occur under implementation of this alternative. As discussed throughout Section 5.5, construction impacts at ANL-W would be small. Construction activities at ANL-W would have little or no impact on the surrounding minority and low-income populations.

**Impacts of Normal Operations on Minority and Low-Income Populations**

As discussed in Section 5.5.10.1, incident-free operations at FMF would result in the activation of 10 curies per year of the radionuclide argon-41. Argon-41 is a colorless, inert gas with a half-life of approximately one hour and 48 minutes. The expected number of latent cancer fatalities that would result from external exposure to argon-41 among the general public surrounding ANL-W would be approximately  $2 \times 10^{-7}$ . No internal dose, either from ingestion or inhalation of argon-41, would result from normal operations at FMF. Therefore, normal operations



**Figure E-23 Cumulative Percentage of Populations Residing within 80 Kilometers (50 Miles) of FMF**

conducted under the ANL-W Alternative would not pose a significant radiological risk to resident minority or low-income populations.

### **Impacts of Accidents on Minority and Low-Income Populations**

In terms of radiological consequences and risk, the most severe accident among those evaluated in this EIS would result in a high pressure spray fire at FMF (Section 5.5.10.2 of Chapter 5). All accident risks to any member of the public are essentially zero. Hence, none of the postulated accidents would pose a significant radiological risk to the public, including minority and low-income individuals and groups within the population at risk.

As discussed in Section C.2 of Appendix C, consequences due to accidents were calculated with the MACCS2 Model. This model evaluates doses due to inhalation of aerosols, such as respirable plutonium, and exposure to the plume. Longer term effects including resuspension/inhalation and ingestion of contaminated crops, wildlife, and fish are not included in the calculation. Such effects are largely controllable through interdiction. In order to conservatively estimate the radiological dose due to inhalation, the deposition velocity was set equal to zero during the MACCS2 calculations. Radioactive materials that would be deposited on surfaces remained airborne and available for inhalation. Given the rarity of accidents that could impact offsite individuals and the conservatism in the calculations of inhaled dose, implementation of the ANL-W Alternative would not be expected to pose a significant radiological risk to resident low-income or minority populations, including low-income and minority groups that depend upon subsistence consumption of locally grown crops and wildlife.

## E.6 REFERENCES

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