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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD PANEL

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

Before Administrative Judge Peter B. Bloch, Presiding Officer

In the Matter of)
)
HYDRO RESOURCES, INC.)
2929 Coors Road)
Suite 101)
Albuquerque, NM 87120)

Docket No. 40-8968-ML

ASLBP No. 95-706-01-ML

**EASTERN NAVAJO DINE AGAINST URANIUM MINING'S AND SOUTHWEST
RESEARCH AND INFORMATION CENTER'S BRIEF IN OPPOSITION TO
HYDRO RESOURCES, INC'S APPLICATION FOR A MATERIALS LICENSE
WITH RESPECT TO:**

ENVIRONMENTAL JUSTICE ISSUES

February 19, 1999

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LEGAL BRIEF AND EXHIBITS

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February 19, 1999

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MATERIALS LICENSE WITH RESPECT TO:
ENVIRONMENTAL JUSTICE ISSUES**

INTRODUCTION

Eastern Navajo Diné Against Uranium Mining ("ENDAUM") and Southwest Research and Information Center ("SRIC") (hereinafter "Intervenors") hereby submit the following brief regarding environmental justice issues in support of their opposition to Hydro Resources, Inc.'s ("HRI's") April 13, 1988 materials license application, as amended, and its license. This brief addresses the failure of the Final Environmental Impact Statement ("FEIS") to adequately weigh and describe the environmental justice impacts of the Crownpoint Uranium Project on the surrounding communities of Church Rock and Crownpoint, New Mexico. As demonstrated below, the FEIS utterly fails to

satisfy federal guidance for the analysis of significant and adverse disproportionate impacts on poor and minority communities. The FEIS ignores or distorts the large body of data showing that poverty, geographic isolation, poor health conditions, and ongoing radiological contamination from the residue of years of uranium mining in the area, combine to make the Church Rock community especially vulnerable to the cumulative adverse environmental impacts of the Crownpoint Project. In fact, the FEIS suppresses the NRC's own data showing that *existing* radiation levels in the Church Rock area already exceed federal standards. The FEIS also wrongly downplays or ignores significant future impacts of the Crownpoint Project that could seriously impact the health of Church Rock and Crownpoint residents, and touts benefits to the community that are illusory. The FEIS also undermines NEPA's requirement for broad participation in the NEPA decisionmaking process, because important elements of the analysis, such as proposed mitigative measures and action alternatives, were never circulated for public comments. Because the FEIS is incomplete, inaccurate, misleading, and prepared without meaningful public participation, the FEIS must be rejected.

This brief is accompanied and supported by the expert testimony of Dr. Robert Bullard (hereinafter "Bullard Testimony") (Exhibit 1), Dr. Christine Benally (hereinafter "Benally Testimony") (Exhibit 2), and Dr. Douglas Brugge (hereinafter "Brugge Testimony") (Exhibit 3). This brief is also accompanied and supported by the testimony of Larry J. King (hereinafter "King Testimony") (Exhibit 4), Mitchell Capitan (hereinafter

"Capitan Testimony") (Exhibit 5), and Mavis Smith (hereinafter "Smith Testimony") (Exhibit 6).

REGULATORY FRAMEWORK

National Environmental Policy Act

The National Environmental Policy Act is designed to ensure that federal agencies consider the environmental impacts of their actions during the development and planning stages of a proposed action. National Environmental Policy Act, 42 U.S.C. § 4321 et seq. (1994) (hereinafter "NEPA"). The plain language of NEPA explains that its procedural measures for the protection of the human environment must be applied in a nondiscriminatory manner. In Section 101, NEPA charges federal agencies with the "continuing responsibility" to "use all practicable means, consistent with other essential considerations of national policy," to:

improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may . . . assure for all Americans safe, healthful, productive and esthetically and culturally pleasing surroundings.

42 U.S.C. § 4331(b)(2) (emphasis added). Again, in Section 101(c), Congress "recognizes that each person should enjoy a healthful environment." 42 U.S.C. § 4331 (emphasis added). Clearly, the intent of NEPA's procedural measures is to ensure that agency decision making must be conducted in a manner that protects every member of the human environment.

For "major Federal actions significantly affecting the quality of the human environment," the federal agency must prepare a detailed environmental impact statement ("EIS") that assesses the proposed action and all reasonable alternatives. 42 U.S.C. § 4332(2). Implementing regulations established by the Council on Environmental Quality ("CEQ") require that socioeconomic impacts associated with significant environmental impacts be addressed in the environmental impact statement. 40 C.F.R. § 1502 (1998). See, also, U.S. Environmental Protection Agency ("EPA"), Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses at 1 (April, 1998) (hereinafter "EPA Guidance on Environmental Justice") (stating that "socioeconomic impacts associated with significant physical environmental impacts be addressed in the EIS"), a copy of relevant pages of which are attached hereto as Exhibit 1-F.

Executive Order on Environmental Justice

President Clinton's Executive Order on Environmental Justice directs all federal agencies to develop strategies for identifying and addressing "disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." Executive Order 12898, 59 Fed. Reg. 7629, 7630 (February 11, 1994) (hereinafter "E.O. 12898"), a copy of which is attached hereto as Exhibit 1-B. Further, E.O. 12898 states that:

each Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures such programs, policies, and activities do not have the effect of excluding

persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color or national origin.

Id. at §2.2.

The EPA Office of Environmental Justice defines environmental justice as:

[t]he fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local and tribal programs and policies.

EPA Guidance on Environmental Justice at 2.

E.O. 12898 and its accompanying Memorandum direct all federal agencies to include health, economic, and social effects on minority and low-income communities in analyses undertaken pursuant to the requirements of NEPA, "to the greatest extent practicable." Louisiana Energy Services, L.P. (Claiborne Enrichment Center), LBP-97-8, 45 NRC 367, 381 (1997). The U.S. Nuclear Regulatory Commission (hereinafter "NRC") has made E.O. 12898 applicable to the agency "by voluntarily agreeing to implement the President's environmental justice directive . . ." Id. at 382. Therefore, "the President's order, as a practical matter, applies to the NRC to the same extent as if it were

an executive agency." Id. See, also, Louisiana Energy Services, L.P. (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 106 (1998), in which the Commission applied the principles of the Executive Order to its evaluation of the adequacy of an environmental impact statement's evaluation of disparate adverse impacts on two environmental justice communities.

CEQ Environmental Justice Guidance Under NEPA

The Council on Environmental Quality has oversight of the federal government's compliance with E.O. 12898 and NEPA. Council on Environmental Quality, Environmental Justice Guidance Under the National Environmental Policy Act at 1 (March, 1998) (hereinafter "CEQ Guidance"), a copy of which is attached hereto as Exhibit 1-C. The CEQ developed the environmental justice guidance to assist federal agencies in carrying out NEPA procedures "so that environmental justice concerns are effectively identified and addressed." Id. The CEQ Guidance notes that E.O. 12898 "contains particular emphasis on four issues that are pertinent to the NEPA process:"

1. The Executive Order requires the development of agency-specific environmental justice strategies. Thus, agencies have developed and should periodically revise their strategies providing guidance concerning the types of programs, policies, and activities that may, or historically have, raised environmental justice concerns at the particular agency. These guidances may suggest possible approaches to addressing such concerns in the agency's NEPA analyses, as appropriate.
2. The Executive Order recognizes the importance of research, data collection, and analysis, particularly with

respect to multiple and cumulative exposures to environmental hazards for low-income populations, minority populations, and Indian tribes. Thus, data on these exposure issues should be incorporated into NEPA analysis as appropriate.

3. The Executive Order provides for agencies to collect, maintain, and analyze information on patterns of subsistence consumption of fish, vegetation, or wildlife. Where an agency action may affect fish, vegetation, or wildlife, that agency action may also affect subsistence patterns of consumption and indicate the potential for disproportionately high and adverse human health or environmental effects on low-income populations, minority populations, and Indian tribes.

4. The Executive Order requires agencies to work to ensure effective public participation and access to information. Thus, within its NEPA process and through other appropriate mechanisms, each Federal agency shall, 'wherever practicable and appropriate, translate crucial public documents, notices and hearings, relating to human health or the environment for limited English speaking populations.' In addition, each agency should work to 'ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public.'

CEQ Environmental Justice Guidance at 3-4.

The CEQ also identified four "important ways to consider environmental justice under NEPA:"

1. Each Federal agency should analyze the environmental effects, including human health, economic, and social effects of Federal actions, including effects on minority populations, low-income populations, and Indian tribes, when such analysis is required by NEPA.

2. Mitigation measures identified as part of an environmental assessment (EA), a finding of no significant impact (FONSI), an environmental impact statement (EIS), or a record of decision (ROD), should, wherever feasible, address significant and adverse environmental effects of proposed federal actions on minority populations, low-income populations, and Indian tribes.

3. Each Federal agency must provide opportunities for effective community participation in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of public meetings, crucial documents, and notices.

4. Review of NEPA compliance (such as EPA's review under § 309 of the Clean Air Act) must ensure that the lead agency preparing NEPA analyses and documentation has appropriately analyzed environmental effects on minority populations, low-income populations, or Indian tribes, including human health, social, and economic effects.

Id. at 4-5.

The CEQ Guidance advises agencies that environmental justice issues can arise at any step of the NEPA process. Id. at 8. Recognizing that there is no “standard formula” for identifying and addressing environmental justice impacts, the Guidance nevertheless articulates six guiding principles, four of which state:

1. Agencies should consider the composition of the affected area, to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the proposed action, and if so, whether there may be disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, or Indian tribes.

2. Agencies should consider relevant public health data and industry data concerning the potential for multiple or cumulative exposure to human health or environmental hazards in the affected population and historical patterns of exposure to environmental hazards, to the extent such information is reasonably available. For example, data may suggest there are disproportionately high and adverse human health or environmental effects on a minority population, low-income population, or Indian tribe from the agency action. Agencies should consider these multiple, or cumulative effects, even if certain effects are not within the control or subject to the discretion of the agency proposing the action.

3. Agencies should recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed agency action. These factors should include the physical sensitivity of the community or population to particular impacts; the effect of any disruption on the community structure associated with the proposed action; and the nature and degree of impact on the physical and social structure of the community.

4. Agencies should develop effective public participation strategies. Agencies should, as appropriate, acknowledge and seek to overcome linguistic, cultural, institutional, geographic, and other barriers to meaningful participation, and should incorporate active outreach to affected groups.

CEQ Environmental Justice Guidance at 8-9.

NRC Environmental Justice Strategy

E.O. 12898 directs all federal agencies to develop agency-specific environmental justice strategies. In accordance with this directive, the NRC has determined that E.O.

12898 and its accompanying memorandum apply primarily to the NRC's efforts "to

fulfill the requirements of the National Environmental Policy Act as an integral part of NRC's licensing process." U.S. NRC Environmental Justice Strategy, 1 (March, 1995) (hereinafter NRC Environmental Justice Strategy"), a copy of which is attached hereto as Exhibit 1-D. The NRC agreed to give careful consideration to CEQ guidelines on how to take environmental justice into account under NEPA. Id. In a March 31, 1994 letter to the President, the NRC Chairman agreed to carry out the measures set forth in E.O. 12898 and its accompanying memo. Id.

The NRC developed an environmental justice strategy that would "integrate environmental justice into the conduct of all pertinent activities" pursuant to fulfilling its NEPA responsibilities. Id. at 2. The NRC's strategy states that:

Greater emphasis will be placed in discussing impacts on minority and low-income populations when preparing agency NEPA documents, such as Environmental Impact Statements (EIS), supplemental EIS's, and when appropriate, Environmental Assessments.

Id.

NRC Office of Nuclear Material Safety and Safeguards Environmental Justice Policy and Procedures Guidance

The NRC Office of Nuclear Material Safety and Safeguards (hereinafter "NMSS") developed its own guidelines on how to take environmental justice into account when conducting analyses pursuant to NEPA requirements. Environmental Justice in National Environmental Policy Act of 1969 Documents, Draft Standard Review Plan for *In Situ* Uranium Extraction License Applications, NUREG-1569, Appendix B (October, 1997)

(hereinafter "NMSS Environmental Justice Guidance"), a copy of which is attached hereto as Exhibit 1-E.

Appendix B of the Draft Standard Review Plan calls for an analysis of demographic data within a 50-square-mile radius of the proposed project; a determination of whether there is a disproportionately high and adverse impact (human health or environmental impact) to minority populations surrounding the project site; consideration of measures that might mitigate the impacts; and finally, documentation of the environmental justice evaluation in the Environmental Impact Statement or Environmental Assessment.

FACTUAL BACKGROUND

Environmental Justice Communities of Church Rock and Crownpoint

Both the Church Rock and Crownpoint communities exemplify an environmental justice population by "nearly any definition." FEIS at 3-79. Their high degree of geographic isolation, high rates of poverty and accompanying health problems and social stresses, and their exposure to industrial toxins clearly identify them as environmental justice communities. Bullard Testimony at 16-17. Approximately 97 percent of residents of the Church Rock Chapter area and 93 percent of residents of the Crownpoint Chapter area are American Indian. FEIS at 3-79 to 3-80. According to the 1990 Census on the Navajo Nation, the median Navajo family income in 1990 was \$11,885 and 56 percent of the Navajo population live below the federal poverty level. Benally Testimony at 10-11.

Health conditions in the environmental justice community are also below national levels. Native Americans in New Mexico have been found to live shorter lives and die at overall rates higher than U.S. whites and all U.S. races combined. Id. at 11. The burden of premature death, measured in years of potential life lost, is about 32 percent higher for Native Americans than for all U.S. races, and is about 76 percent higher for the Navajo population than for the U.S. population as a whole. Id. at 11-12.

Both Church Rock and Crownpoint are relatively small communities with few amenities such as stores and institutions. Church Rock, a community of about 1,742 people, is even more rural and isolated than Crownpoint. Bullard Testimony at 18. Most residents raise sheep, cattle, and other livestock, and families live close to the land. Basic amenities in Church Rock are few; most homes in Church Rock have no running water, and many lack telephones. Id. at 19. Finally, Church Rock has an intensive history of past uranium mining and milling that has left a legacy of ongoing radiation exposures that are above regulatory limits. Benally Testimony at 39.

Crownpoint a town of about 3,000 people, is the capital of the Bureau of Indian Affairs's Eastern Navajo Agency, from which the agency administers its roads, realty, natural resources, and educational programs for surrounding communities. Bullard Testimony at 22. Although some residents live at the more rural edges of Crownpoint, there is a significant population clustered in the town itself. The housing in Crownpoint consists mainly of modest dwellings rented to individuals and families by the Navajo

Nation, U.S. Public Health Service, and the Bureau of Indian Affairs. The town has several schools, a full-service Indian Health Service hospital, some small stores and three gas stations. Nevertheless, given the size of the population of Crownpoint, the community has relatively few businesses and institutions.

Despite extensive uranium exploration that occurred in the 1970s in and around Crownpoint, uranium mines were never developed in Crownpoint. Accordingly, Crownpoint has not suffered the same level of environmental impacts of past uranium mining as has Church Rock. Bullard Testimony at 22.

Above all, Crownpoint is known for its pure, soft, sweet-tasting water. Bullard Testimony at 23. The town has two Navajo Tribal Utility Authority ("NUTA") wells that provide high-quality drinking water not only to residents of the town itself, but also to customers in the outlying Navajo communities of Becenti, Littlewater, and Nahodishgish. Id. At least 10,000 people use water from the Crownpoint system, and many come from miles around to haul water from Crownpoint for drinking, domestic uses and livestock needs. Id. The integrity of the water supply and water system in Crownpoint is of such paramount importance that NTUA's Management Board adopted a resolution in December 1997 stating "its opposition to the proposed in situ leach mining by Hydro-Resources, Inc., . . ." and resolving "not [to] agree to plug and abandon its Crownpoint wells." Id., Exhibit 1-K.

HRI's Application/Environmental Report

Section 2.3. of HRI's Revised Environmental Report contains general information on population and employment trends for counties within an 80 km (50 miles) radius of the Crownpoint Project. The report generally summarizes the effects of the Project on McKinley County's population by stating that the potential impacts would "be minimal (but positive) during both the construction phase and the operations phase." HRI, Inc. Church Rock Project Revised Environmental Report, 337 (March, 1993) (Hearing Record ACN 9304130421/9304130415).

The Draft Environmental Impact Statement only generally describes the local economy for the Gallup-Crownpoint area. NUREG-1508, Draft Environmental Impact Statement to Construct and Operate the Crownpoint Uranium Solution Mining Project Crownpoint, New Mexico (October, 1994) ("DEIS") (Hearing Record ACN 9411160064). The DEIS does not attempt to conduct an environmental justice analysis.

In HRI's responses to the NRC Staff's additional requests for information regarding what the NRC refers to as environmental justice issues, there is no environmental justice analysis or data provided, other than employment predictions, projected permitting requirements and projected lease and royalty terms. HRI's Response to Requests for Additional Information No.s 1-48 (February 20, 1996) (Hearing Record ACN 9602220389).

NRC Staff Review of HRI's License Application

Final Environmental Impact Statement

On February 29, 1997, the NRC Staff issued the FEIS for the Crownpoint Project. NUREG-1508, Final Environmental Impact Statement to Construct and Operate the Crownpoint Uranium Solution Mining Project, Crownpoint, New Mexico (February 29, 1997) (Hearing Record ACN 9703200270). In the FEIS, the NRC Staff admits that "because the population near the proposed project sites is made up almost entirely of Navajo, many of them living in poverty, any significant adverse impact resulting from the project would be an environmental justice impact." FEIS at 4-112.

The FEIS states that the proposed project will be located in the Navajo communities of Crownpoint and Church Rock. FEIS at 3-78. However, while the FEIS provides general socioeconomic information for McKinley County and describes the striking poverty rates for the county's Navajo residents, it does not provide information on the socioeconomic conditions for the community of Church Rock and only sparse information for the community of Crownpoint. FEIS at 3-55 to 3-63; Bullard at 19-20. The FEIS briefly describes population growth trends, housing statistics, water and wastewater services, economic activity, and police, fire, and emergency protection for the town of Crownpoint. It does not, however, even attempt to provide similar information for Church Rock other than a mention of schools, stores, and police, fire and emergency protection. FEIS at 3-55 to 3-63.

The FEIS provides U.S. Indian Health Service (IHS) statistics for the population served by its Navajo Area Office. FEIS at 3-79 to 3-85. It points out that lower Navajo mortality rates from heart disease and cancer, compared to U.S. population mortality rates, may be attributed to the fact that Navajo people do not live as long as the rest of the American population because of the number of deaths caused by alcoholism and accidents. FEIS at 3-84. The FEIS notes the high rates of tuberculosis, diabetes, and gastrointestinal disease among the Navajo population but does not provide specific health data for the Church Rock and Crownpoint communities, despite the fact that this information is available from the Navajo Area IHS Office in Window Rock, Arizona. Id.; Benally Testimony at 12-13. It briefly discusses the leading cause of Navajo infant deaths from congenital anomalies and states that:

Although congenital anomalies are the leading cause of infant death in the Navajo and U.S. populations alike, the percentage of deaths by congenital anomalies among Navajo infants is 15 points higher than for U.S. infants (Table 3.5). This difference is noteworthy because there is some evidence to indicate that radiation exposure may be related to the incidence of congenital anomalies (Shields et al. 1992).

FEIS at 3-85.

The FEIS acknowledges that Navajo and Pueblo Indians who do not have a source of steady wage income "rely heavily on their livestock and gardens" and that "these lifeways of the Navajo include herding sheep, goats, and cattle that graze on the land and that are watered from shallow wells or the Rio Puerco." FEIS at 3-85 to 3-86.

In discussing environmental justice impacts of the Crownpoint Project, the FEIS acknowledges that “[s]ignificant adverse effects to groundwater quality would result if an excursion (either horizontal or vertical) occurs or if, after routine mining, water quality is not restored.” FEIS at 4-113. However, the FEIS asserts that these impacts would be addressed by mitigative measures, such as the relocation of the Crownpoint wells, demonstration projects, and restoration of groundwater. Id. at 4-113.

With respect to health physics impacts, the FEIS concludes that the proposed mining would have “negligible” impacts.” Id. at 4-117. With respect to socioeconomic impacts, the FEIS asserts that the proposed project would have a positive effect on the local economy due primarily to an increased number of jobs. Id. at 4-118.

HRI's Material License

On January 5, 1998, the NRC Staff issued a license to HRI for the construction and operation of in situ leach (“ISL”) uranium mining and milling facilities at the Crownpoint Project in northwestern New Mexico. The license permits ISL mining at three sites: Church Rock, Unit 1, and Crownpoint. It also permits milling at Crownpoint. The license imposes mitigative measures proposed in the FEIS as conditions. Under the license, however, many of the safety and environmental demonstrations proposed in the FEIS as mitigative measures are postponed until *after* issuance of the license, and therefore after the closing of the public’s opportunity for a hearing on whether the decision to issue the license was adequately supported. See, e.g., License Conditions

10.21 (postponing water quality restoration goals), 10.22 (postponing the establishment of upper control limits), 10.23 (postponing groundwater pump tests to determine the integrity of aquitards).

Intervenor's Concerns

On August 15, 1997, ENDAUM and SRIC filed their Second Amended Request, in which they raised, inter alia, concerns regarding the failure of the NRC Staff to comply with the Executive Order on Environmental Justice and with the requirements of NEPA. ENDAUM and SRIC's Second Amended Request for Hearing, Petition to Intervene, and Statement of Concerns (August 15, 1997) at 171-177. Petitioners asserted that the NRC Staff's issuance of a license to HRI, based on an inadequate FEIS, discriminates against the minority, low-income communities of Church Rock and Crownpoint. These concerns were admitted as germane by the Presiding Officer. LBP-98-9, 47 NRC at 283.

ARGUMENT

I. THE FEIS FAILS TO PROVIDE AN ADEQUATE EVALUATION OF THE CROWNPOINT PROJECT'S DISPARATE IMPACTS ON THE ENVIRONMENTAL JUSTICE COMMUNITIES OF CROWNPOINT AND CHURCH ROCK, IN VIOLATION OF NEPA AND E.O. 12898.

A. The FEIS must Evaluate Environmental Justice Impacts on the Communities of Church Rock and Crownpoint.

It is undisputed that the communities in which the Crownpoint Project is to be built and operated, Church Rock and Crownpoint, constitute environmental justice communities. According to the FEIS, "by nearly any definition, the entire area of impact

constitutes an environmental justice population.” FEIS at 3-79. The FEIS further acknowledges that:

[a] significant environmental justice impact is an impact to human health or the environment that is high and adverse and that disproportionately affects a minority or low-income population. Because the population near the proposed project sites is made up almost entirely of Navajo, many of them living in poverty, any significant adverse impact resulting from the project would be an environmental justice impact. Other effects of the project that would be below significant levels in other locations may also have environmental justice implications.

FEIS at 4-112.

Therefore, pursuant to E.O. 12898, the CEQ Environmental Justice Guidance, the NRC Environmental Justice Strategy, and the NMSS Environmental Justice Guidance, the NRC must carry out the steps necessary to evaluate the environmental justice impacts on these communities.

B. The FEIS Fails to Take Into Account the Characteristics of the Environmental Justice Population That Make Them Sensitive to Adverse Impacts

The principles for environmental justice analysis set forth by the CEQ Guidance call for, among other things, consideration of public health data and industry data for the affected population that identifies the "potential for multiple or cumulative exposure to human health or environmental hazards" and "historical patterns of exposure to environmental hazards." CEQ Environmental Justice Guidance at 9. They also direct

agencies to “ recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed agency action,” including the “physical sensitivity of the community or population to particular impacts.” Id.

The FEIS contravenes these basic principle of environmental justice analysis. Although the FEIS correctly describes the Church Rock-Crownpoint region as an environmental justice population and provides some vague and cursory information about health conditions, it fails to describe those conditions or their historical patterns in any detail, or to assess the vulnerability of that population to any additional health and environmental stressors. Benally Testimony at 16-18; Bullard Testimony at 34.

The FEIS does not even attempt to evaluate the physical sensitivity of the environmental justice population to cumulative impacts. Instead, the FEIS erroneously discusses the *psychological* sensitivity of Navajo people to uranium mining. FEIS at 3-86. This constitutes a complete misinterpretation of the meaning of the term “sensitivity” as used in the CEQ Guidance. Bullard Testimony at 34. For example, a group of people that already is in bad health because of previous environmental insults will be more sensitive or vulnerable than a healthy population to the adverse effects of a new environmental insult.¹ Similarly, a community whose residents’ mobility is restricted by

¹As Dr. Bullard explains, “[c]ertain subgroups of the Navajo population, because of chronic ill health, are more susceptible to the additive and possibly synergistic effects of additional exposures to chemical and radiological toxins.” Bullard Testimony at 33. These potentially synergistic effects are also discussed in Dr. Benally’s Testimony at page 36.

poverty will be more sensitive or vulnerable to the impacts of a project than a community whose residents have the means to move elsewhere. Bullard Testimony at 35-36. This is an extremely important criterion which was ignored in this case. Id. at 37-38.

Moreover, the FEIS gives little or no attention to the pattern of past and ongoing health effects caused by the history of uranium mining and milling in the Church Rock area. Bullard Testimony at 35, Benally Testimony at 33-40. While the FEIS generally describes the history of uranium mining and milling activities in northwestern New Mexico and mentions the 1979 United Nuclear Corporation (“UNC”) uranium mill tailings spill into the Rio Puerco, the FEIS provides no detailed information or even a descriptive summary of the magnitude of mining activity in the past, or how many people it affected. As shown by Dr. Benally’s testimony, the past uranium mining activity was much more significant than the FEIS represents. There were 13 uranium mining or uranium processing sites within 4 to 6 miles of HRI’s proposed Church Rock ISL mine. Benally Testimony at 34, Benally Exhibits 2-0, 2-P, and 2-S. Ten of these sites were underground uranium mines, including three from which tens of millions of uranium ore were extracted from the late-1960’s through the early-1980’s. Id. at 34. Two sites were ISL uranium mines. The largest site is the UNC Church Rock uranium mill from which 94 million gallons of radioactive tailings liquids once spilled and which is now an EPA-designated Superfund site. Benally Testimony at 34 and 40..

The FEIS also fails to address the abandoned mines problem existing on Navajo lands, including the area in which HRI plans to operate. Benally Testimony at 24-26. Yet, available data show that the problem is significant. According to the Navajo Abandoned Mine Lands Reclamation Department (hereinafter "NAMLRD"), less than 40 percent of 1,200 abandoned mine sites on the Navajo reservation have been reclaimed. Benally Testimony at 24. At least 670 to as many as 800 mines require basic environmental assessments and remediation plans. Id. Of the 1,200 abandoned mine sites on the Navajo reservation, 96 of them are located in the Eastern Navajo Agency, where HRI plans to conduct its uranium mining operations. Id. at 24-26, Exhibit 2-P.

Further, the FEIS also ignores available data on Navajo health statistics for the two most impacted communities. This includes data showing generally poor health conditions, and data regarding mining-related health conditions among the general population and former Navajo uranium workers who live in the HRI Project area. As testified by Dr. Benally, the data show that accidents and adverse effects were the leading causes of death in the Navajo Area IHS during the period 1992-1994. Id. at 19. Pneumonia/influenza and diabetes were the fourth and fifth leading causes of Navajo deaths. Id. For Navajo uranium workers, deaths from lung cancers and nonmalignant respiratory diseases occurred at rates 3.3 times and 2.6 times that of the U.S. population as a whole. Id. at 22. In addition, the FEIS failed to integrate this information with information already in its possession regarding the effects of subsistence agricultural

practices by Navajos in the area. While the FEIS addresses prospective uptake of radiation doses from new sources (FEIS at 3-85 to 3-86), it does not address the ways in which this lifestyle might enhance uptake of existing contamination.²

Accordingly, by ignoring and failing to evaluate abundant and readily available data regarding historic patterns of environmental impacts and health conditions in the affected community, the NRC Staff violated the requirement of NEPA to take a "hard look" at environmental impacts. The EIS should therefore provide "sufficient discussion of the relevant issues and opposing viewpoints to enable the decision maker to take a 'hard look' at environmental factors and to make a reasoned decision." LES 2, 42 NRC at 88, *citing Tongass Conservation Society v. Cheney*, 924 F.2d 1137, 1140 (D.C. Cir. 1991), *quoting Natural Resources Defense Council, Inc. v. Hodel*, 865 F.2d 288, 294 (D.C. Cir. 1988).

Even worse, the FEIS seems to intentionally present a false and misleading picture of the ongoing radiological impacts in the Church Rock area which are likely to affect the vulnerability of the population to additional health impacts. As demonstrated in a report prepared by Bernd Franke in support of ENDAUM's and SRIC's brief on air emissions, ambient radon and gamma radiation levels in the Church Rock area already

²This effect is potentially significant. For instance, one animal study indicated that sheep and cattle which grazed in the Church Rock area had "statistically higher concentrations of uranium-234 and uranium-238 'in most tissues sampled' than did control animals." Id. at 42 and Benally Exhibit 2-V.

exceed federal regulatory standards.³ This significant existing environmental condition -- which has obvious significance with respect to the vulnerability of the population to additional radiological impacts from HRI's project⁴ -- is completely omitted from the FEIS. Alarming, although data showing high radiation levels at Church Rock were reported in the 1994 Draft Environmental Impact Statement, the information is simply omitted from the FEIS. DEIS at 3-19; Bullard Testimony at 28.

Moreover, the FEIS misleadingly describes ambient radiation in the area of the Crownpoint Project as "naturally occurring" background, and averages ambient radiation

³ Given the past history of uranium mining, milling, and existing contamination from those activities, it is not surprising to find that "ambient radon levels at the HRI Section 8 site, more than 10 years ago, were at least one order of magnitude (i.e., 10 times) higher than airborne radon concentrations in Crownpoint." Bullard Testimony at 27, citing Bernd Franke, Crownpoint Uranium Solution Mining Project: Review of Outdoor Radon Levels and External Gamma Radiation at 4-7 (January 5, 1999) ("Franke Report"). (Mr. Franke's report is attached as Exhibit 2 of his testimony, which was filed in support of Intervenors brief on air emissions on January 11, 1999). Ambient radon levels were recorded at even higher levels at a 1980-1981 monitoring station located less than a mile from several abandoned 1950's-era mines and within three to five miles from the HRI Church Rock site. Benally Testimony at 37-38 and Benally Exhibit 2-S. Many of the area's residents are routinely and chronically exposed to ambient radon concentrations in the air that range from about 5 times to as much as 42 times higher than background levels measured in Crownpoint in the late-1970's and early-1980's. Benally Testimony at 38, citing Franke Testimony, Exhibit 2 at 13. Moreover, gamma radiation levels remain elevated at most of the Church Rock area abandoned mine sites. Bullard Testimony at 28; Benally Testimony at 38-39 and Benally Exhibits 2-0, 2-P and 2-S.

⁴ For example, using a Biological Pathway Model to measure human exposure to radiological contaminants in the Church Rock area, Dr. Benally postulates that the non-background exposure to radiological contaminants for an individual in the Church Rock area is 14 times greater NRC's maximum allowable dose to the public, or a TEDE of 1,400 mrem/yr. Id. at 38.

levels over a huge area so that the high Church Rock levels are not apparent. Bullard Testimony at 29-30. In this way, the FEIS paints a false and misleading picture of existing environmental conditions in the Church Rock area. Therefore, the FEIS must be rejected.

The FEIS also fails to take into account the heightened vulnerability of the environmental justice community to additional environmental impacts, due to a unique combination of cultural and socioeconomic characteristics that substantially reduces the mobility of the residents of Church Rock and Crownpoint. As Dr. Bullard testifies, because of their deep religious and cultural ties to the land, and because of their limited economic means, residents of Church Rock and Crownpoint are unlikely to be able or willing to move away from any health threat posed by the HRI mines and processing plants. Bullard Testimony at 36. The failure to address this significant cultural and socioeconomic feature of the community is inconsistent with the third principle of the CEQ Guidance that agencies should “recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed agency action.” CEQ Environmental Justice Guidance at 9.

C. The FEIS Fails to Evaluate Disproportionately High and Adverse Impacts on the Environmental Justice Communities of Church Rock and Crownpoint.

In the NMSS Environmental Justice Guidance, the NRC states that after it is

determined that a site has a potential for an environmental justice concern, it becomes necessary to "determine if there is a 'disproportionately high and adverse' impact (human health or environmental effect) to the minority or low-income population surrounding the site." NMSS Environmental Justice Guidance at B-2. The FEIS recognizes that some of the impacts on the communities surrounding the Crownpoint Project are significant, although the Staff deems them addressable by mitigative measures.⁵ With respect to other impacts, however, the FEIS erroneously underestimates them or ignores them.

First, the FEIS's conclusion that airborne radiological emissions from the proposed HRI project will be negligible is not adequately supported. As discussed in ENDAUM's and SRIC's brief regarding radiological airborne emissions and in the Franke Report, the FEIS's conclusion that radiation doses from the Crownpoint project will be significantly below regulatory limits (FEIS at pages 4-78, 4-79, 4-83 and 4-85) is fundamentally unreliable, because the underlying assumptions about the source term are based on an inappropriate interpretation of radon-222 measurements in the groundwater at the Crownpoint site. The NRC should have accounted for the significant variability of radon-222 measurements by performing an uncertainty analysis of the data, using appropriate models. When the significant uncertainties relating to the radon-222 source term for the Crownpoint Project are taken into account, it becomes clear that there is a significant likelihood that at all three areas of the Crownpoint project, radon-222

⁵The inadequacy of proposed mitigative measures is discussed in Section D below.

emissions generated by HRI's operation will, by themselves, exceed NRC regulatory limits. Franke Report at 12. By failing to address this considerable uncertainty and grossly oversimplifying the dose calculations for the Crownpoint Project, the NRC significantly underestimated the potential impact of HRI operations.

In addition, the NRC fails to take into account the cumulative effects of prospective HRI radiological emissions with the ongoing ambient radiation doses to the public in the vicinity of the Church Rock mine. This evaluation should have also considered particular health and socioeconomic characteristics of the environmental justice community that make them especially vulnerable or sensitive to additional impacts.

The FEIS is also deficient because it fails to evaluate the health impacts on the already-vulnerable environmental justice community of setting a uranium restoration standard of 0.44 mg/l for ground water and of alternative drinking water sources. FEIS at 4-45 (groundwater restoration standard) and Appendix B at 2 (standard for new drinking water wells). As several of ENDAUM's and SRIC's expert witnesses have testified, 0.44 mg/l is not a safe standard for drinking water. Written Testimony of Dr. Richard Abitz at 49-51 (January 11, 1999), Brugge Testimony at 12-14, Bullard Testimony at 34-35. In fact, although it is to be applied to drinking water in this case, the "default" standard of 0.44 mg/l for uranium that is set forth in the FEIS and in the HRI license is not a drinking

water standard at all.⁶ The 0.44 mg/l standard is ten times more lax than the EPA UMTRA standard of 0.044 mg/L and 20 times more lax than EPA's proposed drinking water regulation of 0.020 mg/L. It is also about 176 times higher than the concentration of uranium present in the water now present in Crownpoint drinking water wells. Bullard Testimony at 35; Brugge Testimony at 14. The FEIS should have examined whether existing health conditions in Church Rock and Crownpoint place residents at greater risk than other Americans or New Mexico residents if they consume groundwater that has been degraded to these levels. Id.

Although it is characterized as a mitigation measure in the FEIS, the relocation of community wells from a pristine aquifer to an unidentified source of ground water of unknown quality constitutes a disproportionately high and adverse impact for the residents of Crownpoint. For Crownpoint Navajo residents, the town's pure drinking water is a precious and respected natural resource. Bullard Testimony at 23. It is estimated that at least 10,000 Navajo residents of Crownpoint and outlying communities use Crownpoint's water supply for drinking water. Id. To substitute an unknown and potentially unreliable drinking water well, with water quality potentially much lower than that of the existing Crownpoint wells, constitutes a significant and disproportionate impact on this community that has not been addressed.

⁶ Neither are the standards for barium and fluoride for which a state groundwater standard is used, not the federal or Navajo Nation drinking water standards for these two constituents. Abitz Testimony at 48.

D. The Mitigative Measures Proposed in the FEIS are Inadequate to Protect the Communities of Church Rock and Crownpoint from Significant Adverse Health Effects.

The FEIS admits that in the absence of mitigative measures, the Crownpoint Project will have significant adverse impacts. FEIS at 4-112-119. To minimize these impacts, the FEIS proposes mitigative measures. *Id.* As recognized in the CEQ Guidance, mitigative measures constitute an important element of an environmental justice analysis. A finding of disproportionately high and adverse health and environmental effects in a minority, low-income community should “heighten agency attention” to mitigation strategies. CEQ Environmental Justice Guidance at 10.

Here, the key mitigative measures proposed by the FEIS must be re-examined, because they are likely to be ineffective in protecting public health in the environmental justice communities of Church Rock and Crownpoint.

Chief among these mitigative measures is the relocation of the Crownpoint drinking water wells. As discussed above, the uranium standard proposed for these new wells is unsafe. Moreover, the FEIS does not describe whether there are any suitable locations for replacement wells or the impacts of losing the current wells to contamination. The FEIS admits that Crownpoint doubled in size between 1980 and 1993 but does not discuss the future drinking water supply needs of this growing community. FEIS at 3-56.

Many of the other mitigative measures discussed in the FEIS are illusory. Rather

than constituting new and different requirements in addition to what is needed for safe licensing and operation, they, in fact, just require HRI to submit tests or information that would normally be required in a license application. See Wallace Testimony in support of Intervenor's groundwater presentation, at 26, 53-55, 60, 78-79. In fact, these measures degrade the level of safety provided by a typical NRC license, because they allow HRI to postpone the safety demonstrations until sometime after licensing, rather than prior to licensing when they are subject to more rigorous mandatory review and licensing hearings. ENDAUM and SRIC's Presentation on Performance Based Licensing Issues at 17-18 (December 7, 1998). For example, the license does not require HRI to submit a surety estimate or plan for the proposed mines and mill until after licensing. Financial assurance for decommissioning is already required by NRC regulations for licensing of a source materials facility, and it must generally be provided before licensing. 10 C.F.R. § 40.36. Therefore, it does not constitute a legitimate mitigative measure to take a typical regulatory licensing requirement and postpone compliance until sometime after licensing. Indeed, the characterization of such mandatory requirements as mitigative measures is misleading.

The FEIS admits that construction and operation would have adverse impacts on land use at each of the three sites, but concludes that impacts are not significant because HRI proposes compensating residents required to relocate and grazing rights permittees, along with performing site restoration and reclamation. FEIS at 4-118, 4-125-126. This

attempt at mitigation is unlikely to be effective to protect the local communities. The Church Rock land use surveys demonstrate that most homes in this area have been passed down for several generations, and monetary compensation will not replace the social fabric torn by relocation. Bullard Testimony at 20-21; Benally Testimony at Exhibit 2-J; Smith Testimony at Exhibit 6-A. Additionally, as Larry J. King and Mitchell Capitan testify, grazing livestock is an important element of Navajo culture. King Testimony at 4-5; Capitan Testimony at 4-5; Bullard Testimony at 35-37. Both King and Capitan state that their lives would not be complete or "free" without owning livestock. Id.

Accordingly, because the proposed mitigative measures have not been demonstrated to reduce the adverse impacts of the proposed mine -- and indeed may exacerbate them -- the measures need to be re-examined.

E. The FEIS's Discussion of the No Action Alternative is Inadequate.

The FEIS's discussion of the no-action alternative with respect to existing radiation levels is unsupported and misleading. The FEIS states that:

At the Church Rock site, areas of the site have greater concentrations of residual radioactivity present than would be allowed in decommissioning the site. With the proposed project, these areas would generally be cleaned up as part of the well field decontamination. Under the no-action alternative, the residual radioactivity would remain in these areas and would not necessarily be remedied.

FEIS at 4-88. This discussion is significant, because it implies that the neighbors of the

Church Rock mine would be better off with respect to radiological impacts if the mine went forward than if it did not. The FEIS inflates the possibility that prior site contamination will be included in decommissioning. FEIS at 4-88. The actual description of this supposed "benefit" sidesteps any commitment to clean up past contamination by stating that ". . . these areas *may* be cleaned up as part of the well field decontamination." FEIS at 4-117 (emphasis added.) HRI's source materials license contains no requirement that prior contamination be removed during site decommissioning. While cleanup of existing contamination would be a necessary benefit, the problem remains that emissions of radon will exceed regulatory limits during the entire production phase. Franke Report at 6-7. Therefore, this statement of potential benefit to the environmental justice community of Church Rock should be disregarded as completely unsupported and misleading.⁷

F. The FEIS Fails to Provide an Accurate or Complete Assessment of the

⁷ As Dr. Bullard noted, however, existing contamination on Section 8 should be cleaned up, regardless of whether HRI ever mines at the site, because it remains a potential, if not actual, environmental health problem. HRI's April 1988 Church Rock Environmental Report showed the extent of the contamination in Section 17 and Section 8 in Fig. 2.9-1, which Mr. Franke reproduced as Figure 6 of his testimony report. In late 1993, SRIC and the Water Information Network brought to the attention of the NRC Staff their field observations that cattle were seen grazing on the contaminated lands. See, letter from C. Shuey and L. Bird to J. Grimm (December 14, 1993) (ACN 9509060115) ("SRIC Letter"). In light of previous studies showing uptake of radionuclides in livestock that grazed in the New Mexico uranium mining districts, we fear that unnecessary exposures to livestock and to people who eat the animals may be occurring on a routine basis without the knowledge of the animals' owners or the local communities." SRIC Letter at 3. As late as February 1996, HRI reported to NRC that grazing was still taking place on Section 8 under active leases. See, HRI Response to RAI #10 (February 20, 1996) (ACN 9602220389).

Relative Costs and Benefits of the Proposed Crownpoint Project and Their Inequitable Distribution.

In its cost-benefit analysis, the NRC lists several benefits of the project to local communities, primarily jobs, royalties and tax revenues. FEIS at 5-1 to 5-6. The Staff finds that only one cost exists — the risk of contaminating a public water supply, which it finds is completely mitigated by the requirement that HRI pay for the cost of replacement and additional operating costs. FEIS at 5-6, 7.

This section is clearly skewed in favor of the project. As Dr. Sheehan testifies, the benefits to the local community are greatly exaggerated in several ways: (1) the claimed employment benefits are overstated given that HRI is faced with laying off trained workers at the company's Texas operations, and HRI exaggerated the wages it will pay to local Navajo employees, (2) the royalty income estimate is based on an unreasonably high market price for uranium and the income will be concentrated among the owners of only nine different Navajo allotments, (3) the tax revenues are exaggerated because the Navajo Nation may not have taxing jurisdiction over all of the properties, (4) the state personal property estimate unrealistically assumes HRI will invest more than \$16 million in personal property, and (5) the real property tax estimate is based on unrealistic production value and market price and it does not deduct non-production tax from taxes during production. See Dr. Sheehan testimony in support of ENDAUM and SRIC's cost-benefit presentation at Sections IIC, D, and E (February 19, 1999).

The FEIS also overstates the employment benefits to local residents. The FEIS endorses a local hiring plan, and provisions in royalty leases granting employment preference to allottees. FEIS at 4-96. The FEIS also assumes that of 100 jobs for which local residents would qualify, all of the jobs would go to locals. FEIS at 4-97 and Table 5.4 at 5-5. However, these preferential systems appear to conflict with Navajo law that requires employers to advertise throughout the Navajo Nation and to hire the most qualified Navajo applicants. Navajo Nation NPEA, 15 N.N.C. § 604(A)(6) (1995). Given the high unemployment rate on the Navajo reservation, it is likely that HRI's job announcements will attract applicants from all over the reservation. Favoritism of local residents or allottees would violate this statute. Thus, the FEIS's assumptions regarding local employment benefits are unfounded. See Bullard Testimony at 42.

In addition, it is important to note that local residents likely will not enjoy the full benefit of New Mexico state taxes. Many of the roads around Crownpoint and Church Rock, including Navajo Highway 49 between Pinedale and Smith Lake and Navajo Highway 9 between Crownpoint and U.S. Route 666 near Gallup, are maintained by the Navajo Nation or the BIA, not New Mexico. Law enforcement is provided by the Navajo Nation police, not the state or county police forces.

On the other side of the ledger, there are many costs of the project that are ignored or minimized by the FEIS — the risks to public health from radionuclide emissions, groundwater contamination and liquid waste disposal, the cost of groundwater

consumption, risk of loss of cultural resources, and the risk of loss of Navajo land uses are just a few. See Dr. Sheehan Testimony at Section III. The local community is not going to benefit from the imposition of this project in any substantial way, and yet there are substantial risks to the environment and to public health. Bullard Testimony at 42.

G. The FEIS Violates NEPA and the CEQ Environmental Justice Guidance for Meaningful Participation in the Decisionmaking Process.

NEPA is essentially a procedural statute. Its purpose is to inform decisionmakers and the public, and to allow them to comment on the impacts of potentially harmful federal projects. In order for this opportunity to be effective, an EIS must be accurate and complete. As Dr. Bullard notes, “procedural inequity creeps in” when the government uses the credibility and authority of official government documents to pronounce that its proposals are benign, without providing a complete or straightforward analysis of the impacts of the project. Bullard Testimony at 42-43.

Here, as discussed above, there are many significant aspects in which the FEIS is incomplete or inaccurate, such as its portrayal of existing health and environmental conditions in the Church Rock area. In other respects, the FEIS is downright misleading, such as its portrayal of ambient radiation levels, its representations regarding the size of the population close to the Church Rock site, and its assurances that the HRI site will be cleaned up. These omissions, inaccuracies, and misrepresentations undermine the ability of decision makers and the public to make a meaningful evaluation of the environmental

justice impacts of the proposed facility, and thereby violate NEPA.

The public participation goals of NEPA are also unlawfully undermined by the NRC's failure to circulate, for public comment, a complete and accurate discussion of environmental justice impacts. The DEIS contained little or no discussion of environmental justice, and thus the public has never had a real opportunity to comment on the issue. As discussed in ENDAUM and SRIC's written presentation on NEPA issues, the DEIS that was circulated for comment did not contain any discussion of the principal alternatives and mitigation measures proposed in the FEIS. This violates the CEQ guidance that agencies "should assure meaningful community representation in the process." *Id.* at 2. It also violates the CEQ guidance that the identification of disproportionately high and adverse health and environmental effects in a minority, low-income community should "heighten agency attention to alternatives (including alternative sites), mitigation strategies, monitoring needs, *and preferences expressed by the affected community or population.*" CEQ Environmental Justice Guidance at 10; Bullard Testimony at 43. The affected community is not able to make meaningful comment on alternatives, mitigation measures, monitoring, or any other measures designed to reduce adverse impacts on it if those proposals are never circulated for public comment.

The NRC's whole licensing approach to the Crownpoint Project is another example of procedural inequity. ENDAUM and SRIC's Presentation On Performance

Based Licensing at 17-18. The HRI license postpones any requirement for a demonstration of many key safety and environmental requirements until after licensing, when they are no longer subject to a public hearing. This is an unusual procedure, neither legal nor common to NRC practice. *Id.* at 14-15. Moreover, these postponed safety and environmental demonstrations are touted in the FEIS as mitigative measures, when most actually constitute measures that are or should be required to demonstrate the safety of the project in any case. This performance-based licensing approach appears to be designed to preclude public participation on many important safety and environmental issues raised by the HRI license. Thus, it exemplifies procedural inequity.

As discussed above, procedural inequity also stems from the differential application of standards to different groups. The EPA's UMTRA uranium standard of 0.044 mg/L was used to protect the health of the neighbors of the Fernald nuclear factory in Ohio. Yet, the NRC proposes a uranium standard of 0.44 mg/L for the Crownpoint project, even for the relocated Crownpoint municipal supply wells. The NRC is applying, to residents of Church Rock and Crownpoint, a standard that is 10 times less protective than the standard used in Ohio. This raises the question, if the residents of Church Rock and Crownpoint were more well-off and politically powerful, would the NRC still impose such a weakened standard on them? Bullard Testimony at 44.

It is also disturbing that, for a period of many years, residents of Church Rock have been exposed to unsafe levels of radiation caused by the historical uranium mining

and milling activities in the area, and still there is no ongoing environmental monitoring or health surveillance in this affected community. Benally Testimony at 42-43. Despite the CEQ's guidance that the identification of disparate impacts on environmental justice communities should "heighten agency attention" to "monitoring needs," the FEIS does not discuss this issue at all. CEQ Environmental Justice Guidance at 10; Bullard Testimony at 43; Benally Testimony at 44-45.

Finally, the NRC has failed to include tribal representation in the decision-making process. For one thing, the Navajo Nation has made its opposition to additional uranium mines within its jurisdiction well-known. The Nation adopted a moratorium on uranium mining in 1983, which was reaffirmed in 1992. FEIS at 3-87. The NRC has ignored the Navajo Nation's position and issued a license to HRI. This in-your-face approach violates the CEQ directive to agencies to respect the government-to-government relationship between the U.S. and tribal governments, and the federal government's trust responsibility to Indian tribes. CEQ Environmental Justice Guidance at 9. In addition, the NRC did not include community representatives in making its decision to include relocation of the Crownpoint drinking water supply system as a license condition. Indeed, the management board of the NTUA passed a resolution, in December, 1997, stating NTUA's opposition to the proposed mine and resolving not to agree to abandon its water system. Bullard Testimony at 23 and Exhibit 1-K.

In conclusion, the FEIS fails to describe and address significant and adverse

disproportionate environmental justice impacts on the low-income, Native American communities of Church Rock and Crownpoint and therefore cannot support the issuance of a source materials license.

CONCLUSION AND REQUEST FOR RELIEF

For the foregoing reasons, the FEIS for the Crownpoint Project is completely inadequate to evaluate the environmental justice impacts of the proposed mines and mill. Accordingly, the Presiding Officer should reject the FEIS as inadequate to support the HRI license, and order the revocation of the license.

Respectfully submitted this 19th Day of February, 1999.



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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD PANEL '99 FEB 22 P12 :06

DOCKETED
USMRC

Before Administrative Judge Peter B. Bloch, Presiding Officer

OFFICE OF SECRETARY
RULEMAKING AND
ADJUDICATIONS STAFF

In the Matter of)
)
HYDRO RESOURCES, INC.)
2929 Coors Road)
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Albuquerque, NM 87120)

Docket No. 40-8968-ML
ASLBP No. 95-706-01-ML
February 19, 1999

CERTIFICATE OF SERVICE

I hereby certify that:

On February 19, 1999, I caused to be served copies of the following:

ENDAUM and SRIC's Brief in Opposition to Hydro Resources, Inc.'s Application for a Materials License with Respect to: Environmental Justice Issues

via e-mail and upon the following persons marked an asterisk (*) by Federal Express, standard overnight delivery, and upon the following persons marked by a (+) by U.S. mail, first class, and in accordance with the requirements of 10 C.F.R. § 2.712.

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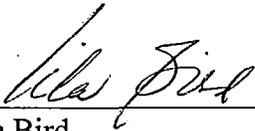
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February 17, 1999

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Chief Administrative Judge Peter B. Bloch, Presiding Officer

_____)	
In the Matter of)	
)	
HYDRO RESOURCES, INC.)	Docket No. 40-8968-ML
2929 Coors Road, Suite 101)	
Albuquerque, NM 87120)	ASLBP No. 95-706-01-ML
)	
_____)	

**TESTIMONY OF DR. ROBERT D. BULLARD
REGARDING ENVIRONMENTAL JUSTICE ISSUES AT
THE CROWNPOINT URANIUM PROJECT**

On behalf of Eastern Navajo Diné Against Uranium Mining ("ENDAUM") and Southwest Research and Information Center ("SRIC"), Dr. Robert D. Bullard submits the following testimony regarding environment justice issues regarding Hydro Resources Inc.'s ("HRI's") amended application for a source materials license.

Q.1.: Please state your name, affiliation, and qualifications.

A.1.: My name is Robert D. Bullard. I am Ware Professor of Sociology at Clark Atlanta University ("CAU"). Prior to joining the faculty at CAU, I served as professor of sociology at the University of California, Riverside, and visiting professor in the Center for African-American Studies at UCLA. I received my M.A. from Clark Atlanta University and my Ph.D from Iowa State University. I have worked on and conducted research in the areas of urban land use, housing, community development, industrial facility siting, and environmental quality for more than twenty years.

My scholarship and activities have made me one of the leading experts on

environmental justice. I was one of the planners of the First National People of Color Environmental Leadership Summit. I was selected to serve on President Clinton's Transition Team in the Natural Resources and Environment Cluster (Departments of Interior, Energy, Agriculture, and Environmental Protection Agency). I served on the U.S. Environmental Protection Agency National Environmental Justice Advisory Council ("NEJAC"), for which I chaired the Health and Research Subcommittee. I currently serve on EPA's National Advisory Council on Environment and Technology ("NACEPT"), Title VI Implementation.

I am the author of numerous articles, monographs, and scholarly papers that address equity concerns. My People of Color Environmental Groups Directory 1994 is widely used in the environmental and social justice movements. My 1979 study of "Solid Waste Sites and the Black Houston Community" (reported in Sociological Inquiry [1983]) and "Invisible Houston: The Black Experience in Boom and Bust" (1987) supported the first lawsuit to use the 1964 civil rights law to challenge environmental discrimination. I have written or edited six books. My book, In Search of the New South: the Black Urban Experience in the 1970s and 1980s (1989) won the 1989 Gustavus Myers Center award for the Study of Human Rights in the United States. My book Dumping in Dixie: Race, Class and Environmental Quality (Westview Press: 1990) has become a standard text in the environmental justice field. My other books include: Confronting Environmental Racism: Voices from the Grassroots (South End Press: 1993); Unequal Protection: Environmental Justice and Communities of Color (Sierra Club Books, 1994). I was also an editor, with Ruth Ann Shelton, Nestor Rodriguez, Joe R. Feagin, and Robert Thomas, of Houston: Growth and Decline in a Sunbelt Boomtown (Temple University Press: 1989). With Charles Lee (Commission for Racial Justice) and J. Eugene Grigsby (UCLA) I co-edited Residential Apartheid: The American Legacy (UCLA Center for Afro-American Studies Publications: 1994). My most recent book is entitled Just Transportation: Dismantling Race and Class Barriers

to Mobility (New Society Publishers, 1997). A more complete statement of my professional qualifications is attached as **Exhibit A** to my testimony.

Q.2.: What is the purpose of your testimony?

A.2.: I have been asked to prepare testimony in support of the concern raised by ENDAUM and SRIC regarding the environmental justice impacts of the Crownpoint Uranium Project, a proposed in situ uranium leach mining and milling operation in northwestern New Mexico. The purpose of my testimony is to discuss my conclusion that in several key respects, the Final Environmental Impact Statement ("FEIS") (NUREG-1508, February 1997) for the Crownpoint Uranium Project is deficient in its consideration of the environmental justice implications of the proposed project.

In particular, the FEIS is inadequate because it fails to accurately characterize the Native American environmental justice communities of Church Rock and Crownpoint, to evaluate historic and ongoing patterns of exposure to environmental hazards that the residents of these communities particularly vulnerable to additional adverse impacts, or to evaluate the disproportionate way in which the adverse impacts of the Crownpoint Project will fall on Church Rock and Crownpoint. The FEIS also fails to make a fair or reasonable comparison of the relative costs and benefits of the proposed project, especially as they relate to environmental justice issues. In addition, the mitigative measures proposed by the FEIS to soften the impacts of HRI's proposed mining and milling operation are inadequate to effectively protect the community from the hazards of uranium mining. Finally, the manner in which the HRI license was issued, including postponing the evaluation of some important environmental issues until after issuance of the FEIS and after licensing of the facility, exemplifies the type of procedural inequity that characterizes environmental discrimination.

Q.3.: What materials did you review in preparation for your testimony?

A.3.: I reviewed relevant portions of the following:

Draft Environmental Impact Statement to Construct and Operate the Crownpoint Uranium Solution Mining Project Crownpoint, New Mexico (October, 1994) ("DEIS") (Hearing Record ACN 9411160064);

NUREG-1508, Final Environmental Impact Statement to Construct and Operate the Crownpoint Uranium Solution Mining Project, Crownpoint, New Mexico (February 29, 1997) ("FEIS") (Hearing Record ACN 9703200270);

HRI's Responses to Requests for Additional Information Nos. 6-10, 16-21 (February 20, 1996) (Hearing Record ACN 9602220389) ("HRI Response to RAI No.#")

Source Material License SUA-1508 (January 5, 1998) (Hearing Record ACN 9801160066) ("HRI License").

In addition, I reviewed portions of the testimony and briefs filed by ENDAUM and SRIC in this proceeding. I also reviewed a number of other documents, cited in my testimony below, regarding the environmental or public health impacts of the proposed facility and the environmental and health conditions that exist in the affected communities. In December of 1998, I conducted a site visit to the communities of Church Rock and Crownpoint where I toured the area of the proposed mines and mill and conducted interviews with several Church Rock-area residents and several Crownpoint-area residents. I directed the ENDAUM staff to conduct a survey of land occupancy and land-use patterns in the Church Rock area to gain a better understanding of the residential character around HRI's proposed Church Rock facility.

Q.4.: What criteria did you apply in your evaluation?

A.4.: A general framework for my analysis was the National Environmental Policy Act ("NEPA"), which for major federal actions such as this one, requires the government to consider the environmental impacts and weigh the costs and benefits of the proposed action. These include health and environmental effects, the risk of accidental but foreseeable adverse

health and environmental effects, and socioeconomic impacts.

I also considered the developing body of federal policy concerning the consideration of environmental justice in government decisionmaking, including Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," (February 11, 1994) (**Exhibit B**); the Council on Environmental Quality's (CEQ's) Environmental Justice Guidance Under the National Environmental Policy Act (December 10, 1997) (**Exhibit C**); the NRC's Environmental Justice Strategy (March 24, 1995) (**Exhibit D**); the environmental justice guidance of the NRC's Office of Nuclear Materials Safety and Safeguards ("NMSS"), which appears in Appendix B of NUREG-1569, the Draft Standard Review Plan for *In Situ* Leach Uranium Extraction License Applications (October 1997) (**Exhibit E**); and the Environmental Protection Agency's Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses (April 1998) (**Exhibit F**).

Finally, I applied well-established criteria and principles that are used by social scientists for analysis of environmental justice and social equity issues, which I will discuss below.

Q.5.: What is the current federal guidance on consideration of environmental justice issues in Environmental Impact Statements and other government decision-making processes, and how did it evolve?

A.5.: In June of 1992, EPA issued a report entitled Environmental Equity: Reducing the Risks for All Communities. The report concluded that:

Racial minority and low-income populations experience higher than average exposures to selected air pollutants, hazardous waste facilities, contaminated fish and agricultural pesticides in the workplace. Exposure does not always result in immediate or acute health effects. High exposure, and the possibility of chronic effects, are nevertheless a clear cause of health concerns.

Id. at 3.

In response to these findings and the growing national concerns about environmental

justice, President Clinton signed Executive Order 12898 on February 11, 1994, which focused federal attention on environmental health, human health and environmental conditions in minority and low-income communities. The Executive Order establishes federal agency responsibilities as follows:

Each federal agency shall conduct its programs, policies, and activities that substantially affect human health and the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin.

Executive Order 12898, Sec. 2-2.

The U.S. EPA was given the lead in coordinating activities under Executive Order 12898 and an Interagency Working Group ("IWG") was created to draft environmental justice strategic plans. EPA Administrator Carol Browner noted in her introductory statement to EPA's Draft Environmental Justice Strategy for Executive Order 12898 that "toxic waste sites inhibit economic growth in thousands of communities."¹ The Administrator went on to state:

Our goal is to ensure that no segment of the population, regardless of race, color, national origin, or income, as result of EPA's policies, programs, and activities, suffers disproportionately from adverse health or environmental effects, and all people live in clean and sustainable communities.

Those who must live with environmental decisions — community residents, environmental groups, State, Tribal and local governments, businesses, and others — must have every opportunity to participate in the making of these decisions. An informed and involved local community is a necessary and integral part of the process to protect the environment.

¹ C. Browner, 1995. Introductory Statement to EPA Environmental Justice Strategy for Executive Order 12898. Office of Environmental Justice, U.S. Environmental Protection Agency (April 3, 1995) (Exhibit G).

EPA's definition of environmental justice is:

The fair treatment and meaningful involvement of all people, regardless of race, ethnicity, culture, income or educational level with respect to the development, implementation and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

EPA Environmental Justice Policy at 2.

In consultation with EPA, the CEQ has developed guidance to assist Federal agencies in assuring "that environmental justice concerns are effectively identified and addressed." Environmental Justice Guidance Under the National Environmental Policy Act (December 10, 1997) ("CEQ Guidance"). The CEQ Guidance recognizes that there is no "standard formula" for identifying and addressing environmental justice issues, and that the question of whether an agency action raises environmental justice concerns "is highly sensitive to the history or circumstances of a particular community or population, the particular type of environmental or human health impact, and the nature of the proposed action itself." *Id.* at 8. However, the CEQ sets forth six principals that "provide general guidance" *Id.* Briefly summarized, they are that:

1. Agencies should consider whether minority, low-income, or Indian people are present in the area who may be affected by disproportionately high and adverse human health or environmental effects.
2. To the extent such information is "reasonably available," agencies should consider "relevant public health data and industry data concerning the potential for multiple or cumulative exposures to human health or environmental hazards," as well as "historical patterns of exposure to environmental hazards."
3. Agencies should recognize the "interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects

of the proposed agency action." These factors should include "the physical sensitivity of the community or population to particular impacts; the effect of any disruption on the community structure associated with the proposed action; and the nature and degree of impact on the physical and social structure of the community."

4. Agencies should "develop effective public participation strategies," and seek to overcome linguistic, cultural, institutional, geographic, and other barriers to meaningful participation.
5. Agencies should "assure meaningful community representation in the process," seeking input from diverse constituencies.
6. Agencies should "seek tribal representation in the process in a manner that is consistent with the government-to-government relationship between the U.S. and tribal governments, the federal government's trust responsibility to Indian tribes, and any treaty rights."

The CEQ Guidance further advises that, while the identification of disproportionately high and adverse health and environmental effects in a minority, low-income community does not automatically make the proposed federal action environmentally unsatisfactory, such a finding should "heighten agency attention to alternatives (including alternative sites), mitigation strategies, monitoring needs, and preferences expressed by the affected community or population." CEQ Guidance at 10.

The NRC has also developed a "Strategy" for environmental justice.² The Strategy document adopts the EPA's working definition of environmental justice, and acknowledges that the President's Executive Order on Environmental Justice and the accompanying memorandum apply to the NRC's "efforts to fulfill the requirements of the National Environmental Policy Act ("NEPA") as an integral part of NRC's licensing process."³ The Strategy document further notes that the Executive Order is a reminder "to consider, when

² U.S. Nuclear Regulatory Commission Environmental Justice Strategy (March 24, 1995).

³ *Id.* at 1.

environmental impact statements and other environmental documents are prepared, the effects of Federal actions on minority and low-income communities."⁴ The Strategy document also commits the NRC to give "careful consideration" to CEQ guidelines for environmental justice.⁵

In addition, Appendix B of the NRC's Draft Standard Review Plan for ISL Mines contains guidelines that the NRC's Office of Nuclear Materials Safety and Safeguards will use to address environmental justice issues in agency-prepared NEPA documents, including environmental impact statements. See Exhibit E, attached hereto. The guidance recommends procedures to evaluate whether there are significant impacts that disproportionately affect low-income or minority populations, taking into account different patterns of consumption of natural resources as defined by socioeconomic status, race, ethnicity, and/or cultural attributes. Id. at B-2. If there are significant impacts to the minority or low-income populations, the guidance states that mitigative measures and benefits should be examined. If the mitigative measures and benefits do not outweigh the adverse impacts, "the facts should be presented so that the ultimate decisionmaker can weigh all aspects in making the agency decision." Id. at B-3.

Q.6.: Please describe the criteria and principles that you referred to above that are used by social scientists for analysis of environmental justice issues.

A.6.: Let me begin by describing the problem of environmental inequity, which the concept of environmental justice seeks to redress. In the real world, all people, communities and regions are not created equal. Some communities and interests are more equal than others. Unincorporated communities of color are vulnerable to a "triple jeopardy" in that they are often rural, poor, and politically powerless against industrial interests. Unequal interests and power arrangements have allowed poisons of the rich (i.e., toxic wastes, pesticides, discarded batteries, household garbage, etc.) to be offered as short-term remedies for poverty of the

⁴ Id.

⁵ Id.

poor. This scenario plays out in the United States, where low-income people and people-of-color communities are disproportionately affected by the location of waste facilities and "risky" technologies. In the United States, race has been found to be independent of class in the location of municipal landfills and incinerators,⁶ abandoned toxic waste dumps,⁷ and cleanup of Superfund sites.⁸

Recognition of these environmental inequities, while receiving more public attention in the past two years, is not new. For example, the correlation of solid waste-facility siting and the African-American community was well documented and described in Houston, Texas, in 1983.⁹ The United States General Accounting Office ("GAO") reviewed, on a national basis, the correlation between hazardous waste landfills and racial makeup and economic status of surrounding communities in 1983.¹⁰ The United Church of Christ completed a major study of commercial waste facility location and community makeup in 1987.¹¹ Each of these studies identified race as a factor in the siting of environmentally risky waste disposal facilities. Since this period, numerous studies have repeatedly shown that nonwhite Americans and their communities shoulder a disproportionate share of pollution

⁶ Robert D. Bullard, "Solid Waste Sites and the Black Houston Community," Sociological Inquiry 53 (Spring 1983) at 273-288; Robert D. Bullard, Invisible Houston: The Black Experience in Boom and Bust, (College Station, TX: Texas A&M University Press, 1987), Chapter 6 ; Robert D. Bullard, "Environmental Racism and Land Use," Land Use Forum: A Journal of Law, Policy & Practice 2 (Spring, 1993): 6-11.

⁷ United Church of Christ Commission for Racial Justice, Toxic Wastes and Race; Paul Mohai and Bunyan Bryant, "Environmental Racism: Reviewing the Evidence," at 163-176.

⁸ Marianne Lavelle and Marcia Coyle, "Unequal Protection," National Law Journal (September 21, 1992), at S1-S2.

⁹ Bullard, "Solid Waste Sites and the Black Houston Community," supra.

¹⁰ U.S. General Accounting Office (GAO), "Siting of Hazardous Waste Landfills and Their Correlation with Racial and Economic Status of Surrounding Communities" (Washington, DC: 1983).

¹¹ United Church of Christ, Toxic Wastes and Race, supra.

burdens.¹²

The framework for evaluating environmental equity consists of three different aspects: geographic, procedural and social equity.

Geographic equity refers to the location and spatial configuration of communities and their proximity to environmental hazards, noxious facilities, and locally unwanted land uses such as landfills, incinerators, sewage treatment plants, lead smelters, refineries, and facilities handling or disposing of radioactive materials. In part because of their geographic and spatial configuration, some "communities" (such as rural areas, sparsely populated areas, people of color communities, Native American reservations and communities, the Southern United States, third world nations, etc.) are more vulnerable to environmental risks than others.¹³ Others, especially Native American communities, have strong cultural ties to their indigenous lands and these ties inhibit flight from environmental hazards.

Procedural equity refers to the "fairness" question: the extent to which governing

¹² Bullard, Invisible Houston, *supra*; Robert D. Bullard, Dumping in Dixie: Race, Class and Environmental Quality, *supra*; Robert D. Bullard, "In Our Backyards: Minority Communities Get Most of the Dumps," EPA Journal 18 (March/April, 1992) at 11-12; Robert D. Bullard, "Unequal Environmental Protection: Incorporating Environmental Justice in Decision Making," *supra*, at 237-266; Adam M. Finkel and Dominic Golding, eds., Worst Things First: The Debate Over Risk-Based National Environmental Priorities (Resources for the Future: 1994); Bullard, Unequal Protection, *supra*; United Church of Christ, Toxic Wastes, *supra*; Benjamin A. Goldman and Lauri Fitton, Toxic Waste and Race Revisited, (Center for Policy Alternatives: 1994); Leslie A. Nieves, "Not in Whose Backyard? Minority Population Concentrations and Noxious Facility Sites," Paper presented at the Annual Meeting of the American Association for the Advancement of Science, Chicago, Il. (February, 1991); D.R. Wernette and L.A. Nieves, "Breathing Polluted Air: Minorities are Disproportionately Exposed," EPA Journal 18 (March/April, 1992) at 16-17; Bryant and Mohai, Race and the Incidence of Environmental Hazards, *supra*; Lavelle and Coyle, "Unequal Protection," *supra*; U.S. Environmental Protection Agency, Toxic Release Inventory & Emission Reductions 1987-1990 in the Lower Mississippi River Corridor, (1993); Louisiana Advisory Committee to the U.S. Commission on Civil Rights, The Battle for Environmental Justice in Louisiana... Government, Industry, and the People (U.S. Commission on Civil Rights Regional Office, Kansas City: 1993).

¹³ See R.D. Bullard, ed., Confronting Environmental Racism: Voices from the Grassroots, *supra*.

rules, regulations, evaluation and selection criteria, and enforcement are applied uniformly and in a nondiscriminatory way. Procedural "inequities" might involve nonscientific, undemocratic, or arbitrary decision making, exclusionary practices, or nonrepresentativeness of samples. Procedural equity also subsumes the question of reliability and validity of data collected and analyzed in support of a decision. Procedural inequities in the decisionmaking process serve to perpetuate institutionalized bias and discrimination that result in the disproportionate siting of hazardous facilities in nonwhite and low-income communities.

Social equity refers to the role of sociological factors (race, ethnicity, class, culture, lifestyles, political power, organization, legal incorporation, etc.) in environmental decision making. Poor people and people of color often work in the most dangerous jobs, live in the most polluted neighborhoods, and their children are exposed to all kinds of environmental toxins on the playgrounds, in the streets and even in their homes.¹⁴ This is generally the result of their lack of political and economic power in the governmental and economic structures of the larger communities in which they live.

In my professional opinion, all of the aspects of environmental equity described above are relevant to the evaluation of the NRC's FEIS for the Crownpoint Project.

Q.7. : How should environmental justice issues be evaluated in an EIS or an environmental report?

A.7.: As discussed above, for federal actions significantly affecting the quality of the human environment, NEPA requires the federal government to evaluate the potential adverse impacts of the proposed action. This evaluation must include an assessment of the health and environmental consequences and risks, as well as economic and sociological impacts. Under the concept of environmental justice, as well as ordinary sociological principles used in impact analysis, impacts on the human environment cannot be understood adequately without reference to the characteristics of the human population that is being affected. For

¹⁴ See, R.D. Bullard, ed., Unequal Protection: Environmental Justice and Communities of Color. San Francisco: Sierra Club Books, 1994.

instance, the adverse impacts of a hazardous facility on a community that already has a low-income level, little mobility, poor health care, and inadequate community services, will be relatively more severe than for a more wealthy, mobile, and resilient community. Similarly, these communities may not enjoy the benefits of the proposed action to the same level as others do. Thus, any NEPA analysis must inquire into the racial, economic, and educational demographics of the affected population.

To comply with NEPA requirements, the analysis must consider environmental justice concerns through identifying and addressing disproportionately high and adverse human health and environmental effects on minority populations and low-income populations. The U.S. EPA's 1996 *Draft Guidance for Addressing Environmental Justice under the National Environmental Policy Act* listed some of the common pollution sources:

- Number/concentration of point and non-point release sources, including both permitted and non-permitted.
- Presence of listed or highly ranked toxic pollutants with high exposure potential (e.g., presence of toxic pollutants included within EPA's 33/50 program).
- Multiple exposure sources and/or paths for the same pollutant.
- Potential for aggravated susceptibility due to existing air pollution (in urban areas), lead poisoning, existence of abandoned toxic sites.
- Other sources of environmental contamination and human health effects.

Impact assessments need to include an environmental justice analysis that uncovers historical factors that may impact public policy implementation. Some of these areas where considerations should be given include:

- **Industrial Concentration.** Concentration of industries that may pose health risk and factors that encourage certain industries to locate in certain areas.
- **Inconsistency.** Non-uniformity in enforcement, site-selection criteria, and clean-up/remediation methodologies across communities.

- **Program Gaps.** Research gaps and past data collection practices, validity, and adequacy of these data.
- **Arbitrary Process.** Non-scientific and arbitrary decision making and documentation (i.e., selection of community representatives by potentially affected industry rather than by community decree).
- **Negligence.** Past resource allocation practices.
- **Cultural Diversity.** Past and present cultural diversity of decision-making boards, within agencies, on commissions, etc.
- **Obligations.** Failure to fully implement or uphold prior agreements, such as treaties with tribes.

In the real world, environmental hazards often do not occur as a single threat under a "one-chemical-at-a-time" scenario. Many industrial operations are located adjacent to populated areas where land-use practices have allowed other industrial facilities to operate. In some instances, zoning practices have created a "clustering" of polluting facilities in distinct geographic areas. The analysis should assess the impacts of a proposed action, but also the impact of the proposed action added to other past and existing environmental and health hazards.

Section 3.3 (Research, Data Collection, and Analysis) of Executive Order 12898 instructs federal agencies to conduct environmental human health analysis, whenever practicable and appropriate, to identify multiple and cumulative exposure. An environmental justice assessment under NEPA might include:

- **Risk Assessment.** Examine risk, consumption patterns, and impact on "vulnerable" populations (i.e., children, elderly, etc.), and minority and low-income off-site population and factor into the assessment.
- **Risk Communication.** Design culturally sensitive methods to communicate human health risks to minority and low-income populations, and populations that have a language barrier.
- **Diets and Consumption of Natural Resources.** Design methods to assess cultural

variations in human health risks from the ingestion of plants and animals near contaminated sites or polluted rivers and streams, and other pathways presenting potential health risk. For example, some people grow gardens, hunt, and fish and consume what they grow or catch.

- **Cultural Resources.** Develop strategies and methods to protect sacred sites and cultural lands that need to be protected.
- **Cleanup Priorities.** Set priorities to ensure that environmental risks to adjacent populations are addressed in a timely manner and the community concerns are considered in the cleanup process.
- **Community Health Data.** Epidemiological and health data reflective of the community that may show high incidence of diseases and illnesses (i.e., abnormal cancer rates, infant and childhood mortality, low birth rate, blood-lead levels, childhood asthma, etc.).
- **Occupational Exposure.** Occupational exposures experienced by minority and low-income populations which may exceed those experienced by general population.
- **Multiple and Cumulative Exposure.** Assess human health risks and aggravated susceptibility of minority and low-income populations that may result from multiple sources of pollution, including both permitted and non-permitted facilities.

Q.8.: How did you apply the guidelines and criteria described above in evaluating the adequacy of the FEIS to discuss environmental justice concerns?

A.8.: I began by looking at the adequacy of the FEIS to describe the environmental justice communities of Church Rock and Crownpoint, including whether they have particular cultural, health, or socioeconomic characteristics that characterize them as environmental justice communities. I also assessed whether the FEIS adequately identifies and evaluates historic and ongoing patterns of exposure to environmental hazards. I evaluated whether the environmental justice characteristics and historic and ongoing patterns of exposure to environmental hazards might make these communities more vulnerable to the adverse impacts of the Crownpoint Project, and whether the FEIS discusses such vulnerabilities.

I also evaluated the manner in which those benefits and adverse impacts of the

Crownpoint Project would fall on the communities of Church Rock and Crownpoint. I looked to see whether these impacts were accurately portrayed, and whether the FEIS took into account cumulative impacts, the heightened vulnerability of the affected communities to impacts, and the geographic distribution of impacts. I looked at the geographic and socioeconomic distribution of costs and benefits, i.e., whether costs and benefits were evenly distributed between the environmental justice community and the larger society. I also examined the alleged effectiveness of mitigative measures to soften the adverse impacts of the proposed project on the environmental justice community. Finally, I evaluated the procedural equity of the process for preparing the FEIS and issuing the license to HRI.

Q.9.: Please describe Church Rock and Crownpoint and explain why you consider them to be “environmental justice” communities.

A.9.: Both Church Rock and Crownpoint have characteristics of what I have referred to above as "geographic" and "social" inequity. Their high degree of geographic isolation, poverty, and exposure to industrial toxins, identify them as environmental justice communities. In fact, the FEIS correctly recognizes that Church Rock and Crownpoint, as well as the entire 50-square mile area subject to potential impacts of the Crownpoint Project, comprise an environmental justice population by “nearly any definition.” FEIS at 3-79.¹⁵

Church Rock and Crownpoint are relatively small, rural, and isolated Navajo communities located about 20 miles apart in the sparsely populated desert of northwestern New Mexico. Church Rock village, where the Church Rock Chapter House is located, lies about 5 miles east of Gallup, a city of nearly 20,000 people. FEIS at 3-57. HRI’s Church

¹⁵ The FEIS’s proper description of the affected community as “environmental justice populations” is consistent with the first principle of the CEQ Guidance, which instructs agencies to consider the ethnic and sociodemographic “composition” of the affected area. CEQ Guidance at 9. However, the FEIS stopped short of addressing the *second part* of that first principle by failing to assess whether the proposed action would cause disproportionately high and adverse effects *in concert with existing environmental risks* documented in the Church Rock-Crownpoint region.

Rock mining site is located about 13.5 miles northeast of Gallup and about 6.5 miles north of Church Rock village. The town of Crownpoint is located about 36 miles due northeast of Gallup. See, generally, FEIS Fig. 1.1 at 1-2.

Church Rock and Crownpoint are located in the southern portion of the Eastern Agency of the Navajo Nation in an area the Navajo people call *Dinétaah*, or “the land of the People” — a broad area of northwestern New Mexico where the *Diné* have lived for hundreds of years and which they believe is their ancestral homeland. According to Navajo Nation population figures, nearly 93 percent of residents of Crownpoint Chapter (2,468 of 2,658) and 95 percent of residents of Church Rock Chapter (1,684 of 1,780) are “American Indians.”¹⁶ Indeed, the Navajo character of these communities was plainly obvious to me during my visits there and in my conversations and interviews with local residents in December 1998.

Several other communities that I passed through while traveling between Church Rock and Crownpoint are also predominately Navajo in character. These include Pinedale, Mariano Lake and Smith Lake chapters, which had a combined 1993 estimated Navajo population of 1,880. Hence, all of the communities potentially impacted by HRI’s mining project, including the processing and transporting of refined and unrefined uranium materials, are “environmental justice” communities.

All of these communities, including Church Rock and Crownpoint, lie within Navajo Indian Country, and therefore, according to the Navajo Nation Code, are governed by the laws, regulations, policies and jurisdiction of the Navajo Nation tribal government. Title 7 Navajo Nation Code Section 253B (1995) (**Exhibit H**); 18 U.S.C. Section 1151; FEIS at 3-78-79. At the local level, the Chapter government provides local residents a forum to voice their concerns to the tribal government and provides some government services within its geographical domain. Crownpoint is the capital of the Bureau of Indian Affairs’s Eastern

¹⁶ Rodgers, L. Chapter Images: 1992 Edition. Division of Community Development, The Navajo Nation (Window Rock, Ariz.), Fall 1993, at 9.

Navajo Agency, from which the agency administers its roads, realty, natural resources, and educational programs for surrounding communities.

The communities of Church Rock and Crownpoint are different in some respects, and thus I will describe them separately.

A.9.a.: Church Rock. Church Rock, which had a 1993 estimated Navajo population of 1,742, is the more rural and isolated of the two communities affected by the HRI project. Apart from the concentration of about 250 single family homes in and near Church Rock Village, which is located just north of Interstate 40 at State Highway 566, most of the residences appear to be scattered in the area. In that portion of Church Rock Chapter that lies in North Fork Puerco River valley near and around the proposed HRI Church Rock mine site, the people live modestly and close to the land. From my observations and interviews, many of these residents raise cattle and sheep, which they consume for food and clothing in addition to raising for market. Many of the residents also tend vegetable gardens, on which they depend for food, and grow alfalfa for livestock feed. Corn is grown for both food and for religious purposes; corn pollen is used in virtually every traditional Navajo ceremony and by individuals in their daily prayers and offerings. Wild herbs and plants also are gathered for medicinal and religious uses.

Most of the homes I visited in that portion of Church Rock near the proposed mine site had no running water or telephone service. Yet to a person, the Navajos I spoke with repeatedly stated their intention to remain on the land, which they said had been in their families for several generations. They told me how the *Diné* are connected spiritually and through their traditional teachings and practices to "the Mother Earth" and "Father Sky," which they treat not as separate entities but as an integral part of their lives. They stated that they are bound by tradition, religion and respect for their elders to carry on their stewardship of the land and the livestock, wildlife, and plants that depend on it.

There are few amenities in Church Rock Chapter, especially outside of Church Rock

Village. In my site visit and travel in the Church Rock community I noticed the conspicuous absence of residential amenities and public institutions such as schools, libraries, hospitals, pharmacies, grocery stores, restaurants, gas stations, or commercial banks. The closest stores appeared to me to be located in Gallup. The closest hospitals are in Gallup and Crownpoint. There are preschools at Pinedale Chapter and in Church Rock Village, but the closest elementary and middle schools are in Mariano Lake, Smith Lake and Thoreau 12 to 25 miles east of Church Rock and in Gallup to the southwest. The closest high schools are in Crownpoint, Thoreau, Ft. Wingate and Gallup. The only commercial establishment I observed in the northern part of Church Rock Chapter near the HRI site was a combination packaged liquor and convenience store, which I learned from my interviews with local residents is referred to as the "Deadhorse Bar" in recognition of it being the site of the deaths of numerous horses, killed in accidents with motor vehicles on nearby State Route 566. The only commercial activity of any size in the Church Rock area has been uranium mining, which was conducted extensively in the past.

To gain a better understanding of the peoples' occupancy and use of the land in the Church Rock area, I asked the ENDAUM and SRIC staffs to conduct a land-use survey in the vicinity of the HRI Church Rock mine site. My intent was not to obtain a valid statistical sampling of the land uses in the area, but simply to document uses of the land, agricultural practices, human activity patterns (such as water hauling), and the availability of certain basic "conveniences," such as indoor running water and telephone access.

With the assistance of SRIC and ENDAUM staff members, I developed a short land-use survey form which could be easily administered in a short amount of time. A blank copy of the form is attached to my testimony as **Exhibit I**. I instructed Ms. Mavis Smith, ENDAUM's program coordinator, to conduct the survey with a single representative of as many households in the area as time would allow. I encouraged her to ask the questions in the same manner from home to home, including using the same Navajo language terms and concepts as much as possible.

Ms. Smith conducted surveys with 45 different "respondents" on January 30, January 31 and February 6, 1999. She described the methods she used in written testimony, which is identified as Exhibit 6 of ENDAUM's and SRIC's written presentation on environmental justice issues. Copies of her completed survey forms are appended to her testimony as Exhibit 6-A.

I have examined the completed surveys and, with the assistance of the SRIC staff, have compiled the survey results in a table appended to my testimony as **Exhibit J**. The surveys not only confirmed what my observations and interviews had told me, but added substantial new depth to my understanding of what life is like in a landscape that, to an outsider from the East Coast, looks quite barren and foreboding while at the same time imparts a sense of stark and breath-taking beauty.

I learned from the surveys that the Church Rock area is alive with livestock, croplands, homes and Navajo families who have lived on and cared for the land for generations. Ninety-one percent of the respondents reported using their lands for grazing, and thousands of acres are used to support more than 800 sheep, more than 400 head of cattle, 145 goats, and 87 horses. Sixty-two percent of the respondents said they grow crops in small gardens or large fields. Corn and squash were the two more frequently reported crops.

The permanence of the people's occupation of the land is striking. Nearly three of every four respondents said they had lived at their present location "all my life," "for a lifetime," or "lifelong." More than half of the respondents had lived on their lands for more than 40 years, and few as long as 70 to 80 years. More than half also reported that the land had been in their families for three, four or many generations. Nearly 60 percent of respondents reported family sizes of 5 or more persons, and many counted grandparents and grandchildren as family members. The average family size in this survey was about 5 persons, or slightly bigger than the average Navajo family of 4.54 persons and average

Navajo household of 4.07 persons.¹⁷

Hauling water to support household and agricultural needs remains a routine activity of Navajo life in Church Rock, and for many residents, a daily exercise. Nearly nine of out 10 respondents said they haul water for any purpose and do so, on the average, about every third day. They haul water mostly from places within 15 miles of their homes: Gallup, Red Rock State Park, Rehoboth Christian School and Church Rock Village. Only five persons reported hauling water from a local windmill, which is centrally locally near the Puerco River and designated for livestock use.

The volumes of water the people haul vary considerably, from 2 gallons per trip to 1,000 gallons. The average amount hauled was about 165 gallons, which is the equivalent of about three brimming barrels. Even though 51 percent of those surveyed said they have running water in their homes, nearly 8 of every 10 said they haul water for drinking purposes. Seven out of every 10 persons haul water for livestock needs and domestic uses, such as cooking, bathing, and cleaning.

As for conveniences, 22 of the 45 respondents still do not having running water in their homes.¹⁸ And only two persons reported having telephone service in their homes. One in every five of those surveyed has a cell phone and a work phone, and eight respondents reported that they have access to a telephone "near" their homes.

A.9.b.: Crownpoint. Crownpoint is a town of about 3,000 people. Although some residents live at the more rural edges of Crownpoint, there is a significant population

¹⁷ Rodgers, L. 1990 Census, Population and Housing Characteristics of the Navajo Nation. Division of Community Development, The Navajo Nation (Window Rock, Ariz.) (1993), at 41.

¹⁸ According to several Church Rock-area residents I interviewed, including Mr. Larry J. King, ENDAUM's vice president who is a water and sewer technician for the U.S. Indian Health Service in Gallup, water lines are expected to be installed in the northern part of Church Rock Chapter this coming spring or early summer. Hence, the number of people who currently do not have running water in their homes will decrease substantially later this year.

clustered in the town itself. The housing in Crownpoint consists mainly of modest dwellings leased to individuals and families by the Navajo Nation, U.S. Public Health Service, and the Bureau of Indian Affairs. The town has an elementary school, a middle school, and a high school that are operated by McKinley County Public Schools, and a K-8th grade community school, run by the Bureau of Indian Affairs. The Crownpoint Healthcare Facility is a full-service Indian Health Service hospital that serves much of the Eastern Navajo Agency in and around Crownpoint. In addition, there are several stores and three gas stations. Given the size of the population of Crownpoint, however, the community has relatively few businesses, and virtually none of the amenities one would expect to find in a typical town of the same size anywhere in the United States, such as a restaurant, a mortuary, dry cleaners, hair salon or barber shop, or home postal delivery.

Despite extensive uranium exploration that occurred in the 1970s in and around Crownpoint,¹⁹ the town itself and Crownpoint Chapter have had no impacts from the same type of conventional underground mining and milling that characterized uranium development in other areas of the Grants Mineral Belt, including in the Church Rock district. The only uranium project that actually produced uranium in the Crownpoint area was the Mobil Oil Section 9 pilot-scale ISL project, which operated between 1979 and 1987 on a 10-acre tract located more than 5 miles west of Crownpoint.²⁰ FEIS at 4-37. Accordingly, ambient radon levels measured in Crownpoint in 1979 and 1980-81 reflect true "natural" background and serve as a reliable point of comparison to the much higher levels measured in the Church Rock area. Franke Report at 6.²¹

¹⁹ See, e.g., Exhibit I (technical paper on uranium deposits in Section 29 in Crownpoint) of testimony of Richard J. Abitz, attached as Exhibit 1 to ENDAUM's and SRIC's written presentation on groundwater concerns (January 11, 1999, and January 18, 1999).

²⁰ For details on the Mobil Section 9 project, see Exhibit L of the testimony of William P. Staub, Ph.D., attached as Exhibit 2 to ENDAUM's and SRIC's written presentation on groundwater concerns (January 11, 1999, and January 18, 1999).

²¹ Bernd Franke, Crownpoint Uranium Solution Mining Project: Review of Outdoor Radon Levels and External Gamma Radiation (January 5, 1999). Mr. Franke's report is attached

Above all, Crownpoint is known for its pure, soft, sweet-tasting water, according to all of the residents I interviewed in December. It is the home of two Navajo Tribal Utility Authority ("NUTA") wells that provide high-quality drinking water not only to residents of the town itself, but also to customers in the outlying Navajo communities of Becenti, Littlewater, and Nahodishgish. FEIS at 3-22 to 3-25; see, also, Abitz Testimony, Exhibit 1-M (letter from NTUA to NRC dated May 20, 1997). At least 10,000 people use water from the Crownpoint system, and many come from miles around to haul water from Crownpoint for drinking, domestic uses and livestock needs. The integrity of the water supply and water system in Crownpoint is of such paramount importance that NTUA's Management Board adopted a resolution in December 1997 stating "its opposition to the proposed in situ leach mining by Hydro-Resources, Inc., . . ." and resolving "not [to] agree to plug and abandon its Crownpoint wells." See, letter from M.P. Dalton, NTUA, to Office of the Secretary, NRC, and attached resolution at 2; attached hereto as **Exhibit K**.²²

Q.10.: Does the FEIS accurately represent the sociodemographic composition of the affected environmental justice community?

A.10.: No. The FEIS significantly underestimates the population in the area of the Church Rock site.

as Exhibit 2 to his testimony, which was filed in this proceeding on January 11, 1999.

²² Despite NTUA's firm opposition to any plan to have its wells plugged, the NRC Staff persisted in incorporating a condition in HRI's license requiring the Crownpoint wells to be plugged and replaced prior to injection of lixiviant at the Crownpoint wellfields. SUA-1508, License Condition 10.27(A). While the Staff's stated reason for the condition — to protect the Crownpoint underground water supply — is laudable on its surface, the Staff's action was taken without the advice and consent of the affected parties (NTUA and its customers) and without benefit of a technical feasibility study. This procedural inequity was made even more egregious by the Staff's apparent refusal to consider an alternative to moving the town's water wells — such as requiring HRI to *move its* ISL wellfields away from the town, a consideration recommended in the CEQ Guidance (at 10).

An accurate population count of the affected population is one of the most crucial areas of an environmental justice inquiry, because it gives the reviewer a sense of how many people will be affected by the proposed project. Thus, the CEQ guidelines require an environmental justice assessment to give an account of the "composition of the affected area." CEQ Guidance at 8. To be meaningful, such an account must be accurate and complete.

The FEIS does not provide a population count of the Church Rock area in the immediate vicinity of the HRI mine site, but instead gives a qualitative description designed to lead the reviewer to believe that few people reside in the close vicinity of the HRI mine. According to the FEIS, the Church Rock area has just "[a] few scattered residences located within 3 km (2 miles) of the site but only some of them are inhabited throughout the year." FEIS at 3-55. My review showed this representation to be false.

To ascertain how many people live in close proximity to HRI's Church Rock site, I instructed the SRIC staff to prepare a map of the Church Rock area upon which locations of residences would be placed. At the request of SRIC staff, the Navajo Nation Land Department prepared a current "land status" map for the area surrounding the HRI site, and provided it to SRIC in both hard copy and in a computer file.²³ At my direction, Ms. Smith and Mr. Raymond Morgan, SRIC's Navajo community liaison, traveled the countryside to "ground-truth" the locations of homes in close proximity to HRI's site. Mr. Morgan knows the area especially well, having grown up in and lived most of his life near Mariano Lake, which is located about 12 miles east of Church Rock. Using topographic maps and their knowledge of the area, Ms. Smith and Mr. Morgan assisted SRIC's computer specialist, Ms. Annette Aguayo, in placing squares on the land-status map to indicate the locations of

²³ Land status maps show land ownership and jurisdictional patterns of an area. The Church Rock and Crownpoint areas are located within what is regionally called the "checkerboard" area because land status maps resemble checkerboards, using different colors to indicate different land ownerships and governmental jurisdictions. The map provided by the Navajo Land Department had the typical look of a checkerboard land ownership pattern.

residences.

The final map, which is attached to my testimony as **Exhibit L**, contains 173 squares that represent 173 homes. Included in that total are the 45 residences included in the land-use survey and nine residences identified in the FEIS (Fig. 4.5 at 4-84). The rest were identified during the staffs' ground-truthing exercise. There are 26 residences located in the eight one-square-mile sections that border Section 8, where the initial HRI mine site is located.²⁴ (The map coordinates are Section 8, Township 16 North, Range 16 West.) By extending the "area of review" outward another mile, another 61 residences can be counted.²⁵ Hence, at least 87 residences, representing between 350 and 450 people, are located within a two-and-a-half mile radius of the HRI Section 8 site. The 173 residences shown on **Exhibit L**, which, despite the best efforts of my ENDAUM and SRIC colleagues, is likely to be an *underestimate* of the actual number of homes in the area, represent between 692 and 865 people. Therefore, the FEIS's representation that the Church Rock area is sparsely and intermittently populated is grossly inaccurate. This is a significant deficiency, because it results in an inaccurate perception that the adverse environmental impacts of the project on the Church Rock community are mild because there are few people in the area that would be affected.

Q.11.: Does the FEIS adequately describe historic patterns of exposure to human health or environmental hazards?

A.11.: The FEIS correctly observes that northwestern New Mexico "has a long history of uranium mining and milling." FEIS at 4-124. As the FEIS recognizes, part of the proposed HRI ISL mine is in the workings of the Old Church Rock Mine, an underground uranium mine. See FEIS Fig. 2.10 at 2-29, and at 3-35 and 3-40. According to local residents, it

²⁴ These are sections 4, 5, 6, 7, 9, 16, 17 and 18.

²⁵ These residences are located in sections 31, 32 and 33 of T17N, R16W; sections 10, 15, 19, 20, 21 and 22 of T16N, R16W; and section 13 of T16N, R17W.

operated in the early 1960s and again in the late 1970s to early 1980s.²⁶

However, although a significant amount of information about the history of uranium mining in the area is reasonably available, the FEIS goes into very little detail about the very intensive pattern of past uranium mining in the Church Rock area. As discussed in the written testimony of Dr. Christine Benally and as documented in several of the exhibits to her testimony, past uranium mining in the Church Rock area was extensive. See, Testimony of Christine J. Benally, Exhibit 2 to ENDAUM's and SRIC's written presentation on environmental justice issues (February 19, 1999) (hereafter, "Benally Testimony"). At least *thirteen* uranium mines once operated in a five- to six-mile radius of HRI's Church Rock ISL mine site during two distinct periods: the 1950s to the mid-1960s, and the late-1960s to the early-1980s.²⁷ Additionally, United Nuclear Corporation operated a large uranium mill and waste disposal facility just three miles northeast of the HRI Church Rock site from 1977 through 1982.²⁸ I drove past the former UNC millsite and disposal facility during my December visit to the area, and was struck by the large area of land permanently affected by this operation and the close proximity of many Navajo homes to it.²⁹ I have since learned that this is a federal Superfund site, so declared in 1983 because of an extensive groundwater contamination problem.³⁰ This is the kind of negative environmental condition that in my

²⁶ The residents' memories turn out to be quite accurate. Exhibit O to Dr. Benally's testimony shows that the Old Church Rock Mine operated from 1960 to 1962, and again from 1979 to 1982. Additionally, Mr. Larry J. King, who lives in a home on Section 17 within the HRI Church Rock mining site, told me how he and his siblings played on dirt piles at the Old Church Rock Mine in the 1960s, unaware (as they are now) that those piles were mine wastes and low-grade uranium ore piles.

²⁷See Table 4 and Exhibits O, P, Q, R and S of Dr. Benally's Testimony for additional information on the locations, environmental conditions and periods of operation of the mines in the Church Rock Chapter.

²⁸Id.

²⁹The residential character map in **Exhibit L** attached to my testimony indicates there are between 35 and 40 homes within 1.5 miles of the UNC millsite.

³⁰See., e.g., Five-Year Review, United Nuclear Corporation Ground Water Operable Unit, McKinley County. U.S. Environmental Protection Agency Region VI (Dallas, Tex.) (September

experience is all too often invisible to residents of communities affected by industrial pollution. And equally typical is the fact that the UNC facility has already taken twice as long to cleanup as it did operating.³¹

Although the FEIS recognizes at page 4-124 that the the early mines employed many people in the area, the actual figures are quite staggering. Between 600 and 820 people worked in only two of the Church Rock-area mines in the 1970s and 1980s. See Benally Testimony, Exhibit 2I. Many Navajo uranium miners who worked in the early underground mines in the Four Corners Area were exposed to high radiation levels, especially radon and its decay products, resulting in an elevated incidence of lung cancer and nonmalignant respiratory diseases among former Navajo miners. Id. at 22-23. As demonstrated in the Benally testimony, a significant amount of information is available that links employment in the uranium mines to increased incidence of death and disease. Nevertheless, the FEIS makes only vague reference to this issue, and fails to make any meaningful attempt to assess the health impacts of years of uranium mining on the local population. Id. at 21-22.

Q.12.: Does the FEIS recognize and evaluate the continuing pattern of radiological exposures caused by past mining activities.

A.12.: No. The FEIS does not discuss the fact that the mines in the Church Rock area have continued to pose an environmental and health threat even after they closed. As reported in the DEIS and discussed in the Franke Report, ambient radon levels at the HRI Section 8 site more than 10 years ago were at least one order of magnitude (i.e., 10 times) higher than

1998).

³¹ It was also the site of the July 16, 1979, Church Rock tailings spill, in which 94 million gallons of tailings liquid having a pH of about 2 and 1,100 tons of tailings solids poured into a tributary of the North Fork of the Puerco River from a breach in an earthen tailings dam. FEIS at 3-86. See, also, Biological Assessment after Uranium Mill Tailings Spill, Church Rock, New Mexico. Centers for Disease Control, U.S. Public Health Service (Washington, D.C.), EPA-79-94-2 (December 24, 1980).

airborne radon concentrations in Crownpoint. Franke Report, Exhibit 2 at 4-7 and Table 1. And ambient radon levels were even higher at a 1980-1981 monitoring station located within a mile of several abandoned 1950s-era mines that rest on cliffs overlooking the North Fork valley within 3 to 5 miles of the HRI Church Rock site. Benally Testimony at 35-36; Benally Exhibit 2S. Gamma radiation levels remain elevated at most of the Church Rock area abandoned mine sites. Id., Table 4 and Exhibits 2O, 2P, and 2S.

The discussion in the FEIS on this topic is downright misleading. It is particularly troubling to me that data showing high radiation levels at Church Rock were reported only in the 1994 Draft Environmental Impact Statement ("DEIS") (at 3-19), and omitted entirely from the FEIS. Even worse, the FEIS distorts and misrepresents the origin and severity of existing radiological impacts in the Church Rock area.

The DEIS notes the difference between "background radiation" and non-background radiation:

Radiation exposures in the natural environment, known as background radiation, is attributable to cosmic and terrestrial radiation, and to inhalation of radon and its daughters. Human activities *other than uranium mining and processing* (including medical diagnosis and treatment, coal burning, and using certain raw materials) can contribute to background radiation exposures.

DEIS at 3-19 (emphasis added). Noting that background radon levels typically range from 0.1 to 1.0 pCi/l, the DEIS reports that radon measurements taken at Church Rock in 1987 and 1988 were between 0.1 to 13.4 pCi/l, with an overall average of 2.16 pCi/l. DEIS at 3-19. (A concentration of 2 pCi/l is equivalent to a dose of about 1,000 millirems TEDE per year. Franke Testimony, Exhibit 2 at 3.) The DEIS also reports gamma levels near the Old Church Rock mine shaft and ore storage areas of up to 350 μ R/hr. Id. at 3-20. The DEIS attributes these elevated values to past uranium mining activities. Id. at 3-19. As discussed in the Franke Report, other available data regarding Church Rock radiation levels are consistent with the DEIS's representations. Franke Testimony, Exhibit 2 at 6.

The FEIS completely omits any data regarding elevated radiation levels at Church

Rock. Instead, the FEIS generally represents that the “primary radiological impact in the vicinity of the project results from naturally occurring cosmic and terrestrial radiation and naturally occurring radon-222 and its daughters.” FEIS at 4-72. The FEIS also reports that “natural background levels” in “this part of New Mexico” are about 150 mrem/year. Id. Thus, the FEIS does not mention the distinction between “background” radiation levels and non-background levels caused by uranium mining and milling; it completely omits any reference to the high Church Rock radon and gamma radiation levels; and it falsely represents that radiation levels in the area of the proposed project are dominated by naturally occurring sources.

The section of the FEIS devoted to cumulative impacts (Section 4.13.6) perpetuates the same misinformation provided earlier in the FEIS. In discussing existing exposures to radiation, the FEIS reports that the total population dose from existing “natural background sources” within a 50-mile radius of the Crownpoint Project is about 17,000 rem/year to a population of about 76,5000 persons. FEIS at 4-124. This is equivalent to an average individual dose of 222 millirems/year (“mrem/yr”). The discussion of cumulative impacts provides no information whatsoever about the much higher non-background radiation levels at Church Rock. In fact, the data reviewed by Mr. Franke show that combined existing background and non-background radiation levels from radon and gamma radiation in the Church Rock area are on the order of 1,400 mrem/year — more than six times the levels represented in the FEIS. Franke Testimony, Exhibit 2 at 11; see, also, Benally Testimony at 38. Therefore, the cumulative impacts discussion in the FEIS seriously distorts the radiological impacts on the environmental justice community of Church Rock, by conveying the false impression that there are no existing health impacts from human activities that could contribute to the cumulative impacts of the Crownpoint Project.

It appears that the FEIS may have arrived at the relatively low background dose figure of 222 mrem/year per individual by averaging existing radiation levels for a 50-mile radius. If so, the FEIS violates the NRC’s own guidance for environmental justice analyses

in Appendix B of the Draft Standard Review Plan for ISL Mines. Appendix B calls for a geographic scale of analysis that is “commensurate with the potential impact area.” Id. at B-2. The “goal is to evaluate the ‘communities,’ neighborhoods, or areas that may be disproportionately affected.” Id. Although the specific circumstances of each site must be taken into account, the rule of thumb for rural areas is a four-mile radius, or 50 square miles. Id. Instead of looking at impacts within 50 square *miles*, the FEIS looks at a 50-mile *radius*, which is equivalent to about 7,830 square miles. To use such an enormous geographic area dilutes the results of any environmental justice analysis to the point of making it meaningless. The NRC should have defined and examined an area that was subject to uranium mining and milling in the past — such as the area of impact depicted on the Church Rock Mining Map attached as Exhibit S to Dr. Benally’s testimony, or even the area covered by the Residential Character Map that I have attached to my testimony as **Exhibit L**. Either map would focus an inquiry on the at-risk population in the Church Rock area.

I find these misrepresentations disturbing for several reasons. First, they lead to the underestimate of adverse environmental impacts on the environmental justice community. Second, they skew the environmental justice analysis. By failing to report existing non-background levels at Church Rock, and mischaracterizing the predominant existing levels of radiation in the area of the Crownpoint Project as naturally occurring, the FEIS leaves the impression that any radiation is from the natural environment and there are no after-effects of the history of uranium mining on the environmental justice community.³² Thus, these

³² To make matters worse, NRC has known about the existing radiological condition in the Church Rock area since at least 1993, and most likely since 1988. The first set of 1987 ambient radon monitoring data for Section 8 were reported by HRI in its April 1988 Church Rock Environmental Report, in Table 2.9-3 at 231. That same table was updated with the 1988 monitoring data and reported in HRI’s March 1993 Church Rock Revised Environmental Report. These were among the data examined by Mr. Franke, who, with the assistance of the SRIC staff, uncovered ambient radon monitoring data reported by United Nuclear Corporation in a license renewal application submitted to the New Mexico Environmental Improvement Division in December 1981. While the UNC data predated NRC’s assumption of uranium mill regulation in

misrepresentations preclude the FEIS from addressing one of the chief concerns of environmental justice, which is to address and rectify any historical pattern by which society has disproportionately allocated adverse environmental impacts on poor and minority people. By ignoring the fact that past industrial activity represents a continuing risk of injury to public health in the Church Rock area, the FEIS also allows the NRC to avoid a fundamentally important question required in an environmental justice analysis: whether it is justifiable to compound the environmental risk or injury that has already been visited on the Church Rock community by society, by allowing the commencement of yet another uranium mining project.

Q.13.: Do the affected communities have other socioeconomic and health characteristics that may make the affected communities more vulnerable to the adverse environmental impacts of the Crownpoint Uranium Project?

A.13.: Statistics provided in the FEIS show that with respect to income and health, there is a great disparity between the area of the Crownpoint Project and the rest of New Mexico or the United States. These characteristics affect the vulnerability of a population to adverse health and environmental impacts in two key respects. First, people whose health conditions are already poor are more susceptible to adverse additional environmental and health insults. Second, the lower the income level is in a community, the less likely the community is to have access to basic amenities needed to maintain and protect good health, such as running water and access to doctors and medicines. As I have discussed above, for example, many homes in Church Rock are without running water, and the regional populations appears to have a higher prevalence of gastrointestinal disease, a common result of bacterial contamination of water. See, Benally Testimony at 14-16; Exhibit 2D.

the New Mexico in 1986, they were apparently not difficult to find. The point is, the NRC Staff had ample knowledge about and plenty of time to address the radon problem in the Church Rock area, but apparently decided simply to ignore it. That's a clear derogation of the agency's duty to protect the public health and safety on top of being an unambiguous environmental injustice.

Section 3.10 of the FEIS describes health and socioeconomic conditions in relation to environmental justice. It is divided into five subsections, and discusses, among other things, the racial makeup of Crownpoint and McKinley County in comparison to the State of New Mexico; provides information on the very high poverty level (54 percent) among Native Americans in McKinley County; gives health statistics for Navajo people; discusses the Navajo and Pueblo Indians' practice of subsistence agriculture; and addresses the "community's sensitivity to potential adverse impacts of the proposed project." FEIS at 3-86.

The population within 10 miles of the Crownpoint Project is 93.5% to 97.2% Native American, and more than half of the Native American people in that area live below the poverty level. FEIS, Table 3.31 at 3-80. The median income within 10 miles of Crownpoint is \$17,008, and the median household income within ten miles of Church Rock is \$9,874.³³ Id. These income levels are significantly below the median income for the entire state of New Mexico, which is \$24,087. Id. at 3-79.

In addition, statistics compiled for the Navajo Nation show that Navajo people generally have poorer health and lower life expectancies than the general population of the United States. For instance, the mortality rate for Navajo people resulting from alcoholism, accidents, diabetes, and tuberculosis appears to be significantly higher than the corresponding rates for the U.S. population.³⁴ FEIS at 3-84. The life expectancy for men

³³ As Dr. Benally noted in her testimony, median household and family incomes across the Navajo area are even lower than the level cited for Crownpoint in the FEIS. The 1989 median household income for the Navajo Area IHS was \$13,984, or less than half that of the U.S. See, *Regional Differences in Indian Health 1997*, U.S. Department of Health and Human Services, Indian Health Service (1998), Chart 2.9 at 29. And the median Navajo family income, based on 1990 Census data, was \$11,885, or about 30 percent less than the median household income given in the FEIS. See, Chapter Images, 1992 Edition, Division of Community Development, The Navajo Nation (Window Rock, Ariz.), at 3.

³⁴ As the FEIS points out, the fact that Navajo mortality rates from heart disease and cancer are lower than for the entire U.S. population may be attributable to the fact that Navajos, especially Navajo men, do not live as long as the rest of the U.S. population, and thus have less

born in the Navajo Area IHS is 67.1 years, compared with 72.2 years for all U.S. men; Navajo women live about two fewer years than all U.S. women.³⁵

The FEIS also notes that the percentage of infant deaths from congenital anomalies is 15 percent more for Navajos than for the U.S. as a whole. FEIS at 3-84. The FEIS recognizes that “[t]his difference is noteworthy because there is some evidence to indicate that radiation exposure may be related to the incidence of congenital anomalies.” *Id.* at 3-85.

It is reasonable to believe that certain subgroups of the Navajo population, because of their chronic ill health, are more susceptible to the additive and perhaps synergistic effects of additional exposures to chemical and radiological toxins. These groups include individuals who have suppressed immune systems related to their diabetes, end-stage renal disease, respiratory distress and diminished lung function, or chronic gastrointestinal distress. Residents of the northern part of Church Rock Chapter, who are chronically exposed to elevated levels of ambient radioactivity such that their total “background” dose is more than 6 times that which most Americans are exposed to, are another subgroup potentially at increased risk of disease. *See*, Benally Testimony at 16-18, 38.

National statistics provided by the Indian Health Service also show a great disparity between the level of education in the Navajo Area and that of other IHS areas and of the United States. For example, the Navajo Area had the second lowest percentage of high school graduates among all IHS areas (only 54.8 percent), and the third lowest percentage of college graduates in all IHS areas.³⁶

Q.14. : Please describe your evaluation of the FEIS's discussion of environmental impacts in the context of an environmental justice analysis.

incidence of heart disease and cancer, which are more prevalent in the elderly. FEIS at 3-84.

³⁵*See*, Charts 4.36 and 4.37 in *Regional Differences in Indian Health 1997*, U.S. Department of Health and Human Services, Public Health Service (1998), at 78-79.

³⁶ *See*, *Regional Differences in Indian Health 1997 1999*); Charts 2.5 and 2.6 at 27.

A.14.: I find this discussion to be deficient in several key respects. First, as discussed above, the FEIS does not evaluate the vulnerability or sensitivity of the environmental justice community to additional adverse impacts in any meaningful way.³⁷ In particular, the FEIS fails to describe in sufficient detail the historical and ongoing health impacts of uranium mining or the general health and poverty conditions of the environmental justice community, nor does it evaluate the effect of those conditions on any additional impacts that may be imposed by the Crownpoint Project. In fact, as discussed above, the FEIS misrepresents the nature and degree of ongoing radiological impacts in the Church Rock area.

Second, the FEIS is deficient because it fails to evaluate the health impacts on the already-vulnerable environmental justice community of a uranium restoration standard of 0.44 mg/l for groundwater and of alternative drinking water sources. FEIS at 4-45 (groundwater restoration standard) and Appendix B at 2 (standard for new drinking water wells). As several of ENDAUM's and SRIC's expert witnesses have testified, 0.44 mg/l is not a safe standard for drinking water. See, e.g., written testimony of Dr. Richard Abitz at 49-51 (January 11, 1999), and written testimony of Dr. Douglas Brugge at 12-13 (Exhibit

³⁷ In fact, the FEIS completely misinterprets the concept of "sensitivity to adverse environmental impacts" in Subsection 3.10.5. As I discussed earlier in my testimony, it is important to evaluate the characteristics of an environmental justice community that may make it particularly sensitive or vulnerable to the impacts of a proposed project. The CEQ Guidance *recommends* that environmental impact statements should examine the "physical sensitivity" of the affected community to adverse impacts. *Id.* at 9. For example, a group of people that already is in bad health because of previous environmental insults will be more sensitive or vulnerable than a healthy population to the adverse effects of a new environmental insult. Similarly, a community whose residents' mobility is restricted by poverty will be more sensitive or vulnerable to the impacts of a project than a community whose residents have the means to move elsewhere.

Instead of addressing the physical sensitivities that make Church Rock and Crownpoint especially vulnerable to the environmental impacts of a proposed project, the FEIS discusses the *psychological sensitivity* of Navajo people to uranium mining. While the FEIS correctly recognizes that this psychological sensitivity exists and constitutes a source of anxiety and conflict in the community, the concept of sensitivity includes other important factors that were completely ignored in the FEIS.

3 to ENDAUM-SRIC written presentation on environmental justice). In fact, although it is to be applied to drinking water in this case, the "default" standard of 0.44 mg/l for uranium that is set forth in the FEIS and in the HRI license is not a drinking water standard at all.³⁸ The 0.44 mg/l standard is 10 times more lax than the EPA UMTRA standard of 0.044 mg/L and 20 times more lax than EPA's proposed drinking water regulation of 0.020 mg/L. It is also 176 times higher than the concentration of uranium present in the water now present in Crownpoint drinking water wells. The FEIS should have examined whether existing health conditions in Church Rock and Crownpoint place residents at greater risk than other Americans or New Mexico residents if they consume groundwater that has been degraded to these levels.

Third, in discussing the cumulative impacts of airborne radiation on the environmental justice population, the FEIS also claims that additional radiological impacts generated by emissions from the Crownpoint Project would make a "minor contribution" to cumulative impacts. FEIS at 4-124. In the report accompanying his testimony, however, Mr. Franke points out significant deficiencies in the FEIS's analysis of air emissions from the Crownpoint Project, which show that this conclusion is not based on a reasonably accurate or reliable scientific analysis. Mr. Franke's own analysis suggests that radon-222 emissions in the vicinity of the Crownpoint Project will exceed NRC regulatory standards. Franke Testimony, Exhibit 2 at 12. Therefore, the cumulative impacts analysis fails to include a reasonable evaluation of future impacts on the environmental justice communities of Church Rock and Crownpoint.

Finally, the FEIS fails to acknowledge that a unique combination of cultural and socioeconomic characteristics substantially reduces the mobility of the residents of Church Rock and Crownpoint, such that they are unlikely to be able or willing to move away from

³⁸ Neither are the standards for barium and fluoride for which a state groundwater standard is used, not the federal or Navajo Nation drinking water standards for these two constituents. Abitz Testimony at 48.

any health threat posed by the HRI mines and processing plants. The failure to address this significant cultural and socioeconomic feature of the community is inconsistent with the third principle of the CEQ Guidance that:

Agencies should recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed agency action. These factors should include the physical sensitivity of the community or population to particular impacts; the effect of any disruption on the community structure associated with the proposed action; and the nature and degree of impact on the physical and social structure of the community.

Id at 9. Because of deep cultural beliefs and practices that tie Navajo people to the place of their birth, as well as the high level of poverty in the area, Church Rock and Crownpoint residents are unlikely to be willing or able to flee from any contamination that may be caused by the Crownpoint Project. Therefore, the impacts of the project on their health will be intensified by their lack of mobility. This strong cultural bond with the place of one's birth was reflected in my discussions with residents of Church Rock and Crownpoint when I visited there in December of 1998.

Q.15.: Please describe in more detail your observations regarding the tie between Navajo people and the land.

A.15: The cultural predilection to remain in the place of one's birth is reinforced by the existence of a strong extended family system. The extended King family, whose homes and grazing lands are both inside and immediately adjacent to HRI's proposed mine in Sections 17 and 16 of Township 16 North, Range 16 West, is a good example. On the same day in December, I interviewed Larry J. King, his sister Dorothy King, and another sister, Rita Grey, and her son Michael, who was home from college. Their three homes are within shouting distance of each other and the family's herd of cattle grazes on lands surrounding the homes. Larry King told me he now resides in the home once occupied by his late father, Howard, who passed away a few years ago, because of a sense of responsibility to continue to care for the land and livestock on it, as did his father. "This is where I belong," Larry said, adding that moving away is not an option. "Where would we go? We have no where else

to go.”

The writeup of a 1997 meeting between the U.S. EPA and Native American representatives regarding relocation of neighbors of Superfund sites also reflects this unique feature of the Navajo culture.³⁹ During the discussion, relocation was characterized by one Navajo person as “disappearing.” *Id.* at 5. The summary of the comments stated that relocation is a “last resort, or not an option and must guarantee that residents will return to their land.” *Id.* at 10. This significant cultural and socioeconomic characteristic of the community could have a significant effect on the Crownpoint Project’s impacts to the community, and thus it should have been discussed in the FEIS.

The Navajo attachment to the land is also described in the written testimony of Mitchell Capitan, which is Exhibit 5 to ENDAUM’s and SRIC’s written presentation on environmental justice concerns. As Mr. Capitan recounts, the Navajos have a strong sense of family kinship, which is bound up in their ties to the land. When a baby is born, its umbilical cord is buried on family land. Raising livestock on the land is also a deeply rooted Navajo tradition. The Navajos also get their strong sense of place from their religious belief that in order to maintain harmony, they must live within the four sacred mountains that ring the Navajo Nation. As I noted earlier in my testimony, this attachment to the land was demonstrated in the Church Rock land-use survey, in which 71 percent of the respondents said their families had been on the same land for three, four or many generations. *See*, also, attached **Exhibit J** at 1.

Thus, Navajo cultural traditions and religious beliefs create unusually strong ties to the land and a sense of belonging to the place where one was born and grew up. When combined with socioeconomic conditions that make mobility difficult, these traditions and beliefs make it unlikely that a Navajo person or family would move away from the Church Rock or Crownpoint area, even under threat of injury from environmental contamination.

³⁹ The notes of the meeting, entitled “Superfund Relocation Discussion with Native Peoples and Tribal Representatives,” are attached to my testimony as **Exhibit M**.

The FEIS gives no attention to the lack of mobility of the people in Church Rock and Crownpoint. Yet, it is very important with respect to an evaluation of environmental justice impacts. The FEIS acknowledges that the Crownpoint Project could have "significant adverse effects on groundwater quality. . .if an excursion. . .occurs, or if. . .water quality is not restored" and notes that "[s]uccessful restoration of a production-scale ISL wellfield has not previously occurred." FEIS at 4-113. It does not acknowledge, however, that if these impacts occur, the people who live close to the project are unlikely to be able or willing to move away from its effects, and therefore will suffer more from any adverse impacts than would a more mobile population. I view this as a significant deficiency.

Q.16.: Please describe your evaluation of the FEIS with respect to the discussion of the no-action alternative.

A.16.: I am particularly disturbed by the FEIS's discussion of the no-action alternative with respect to existing radiation levels. The FEIS states the following:

At the Church Rock site, areas of the site have greater concentrations of residual radioactivity present than would be allowed in decommissioning the site. With the proposed project, these areas would generally be cleaned up as part of the well field decontamination. Under the no-action alternative, the residual radioactivity would remain in these areas and would not necessarily be remedied.

FEIS at 4-88. This discussion is significant, because it implies that the neighbors of the Church Rock mine would be better off with respect to radiological impacts if the mine went forward than if it did not. Despite the great significance of these representations, the FEIS, by its own use of conditional language, leaves considerable doubt as to whether prior contamination at the Church Rock site will ever be cleaned up: "These areas *maybe* cleaned up as part of the well field decontamination." FEIS at 4-117 (emphasis added). Based on the testimony of Michael Sheehan, it is my understanding that HRI has not submitted any plan or estimate for the cleanup of the entire Crownpoint Project, including its Church Rock component. Michael F. Sheehan's testimony in support of ENDAUM and SRIC's brief on

financial assurance for decommissioning, at 12-13 (January 11, 1999). Nor has HRI provided any information to show that it has sufficient resources to complete such an effort. Sheehan Testimony, pages 23-32. Moreover, the license contains no requirement that HRI clean up this contamination, and HRI has made no such commitment. Cleaning up the Church Rock site would reduce the residual contamination there noted by Mr. Franke (Franke Testimony, Exhibit 2 at 7), thereby reducing exposures for people and animals coming on the land. But it would do nothing to correct HRI's problem that radon emissions during processing are likely to exceed regulatory limits. Franke Testimony, Exhibit 2 at 6-7. Accordingly, this statement of potential benefit to the community of Church Rock should be disregarded as completely unsupported.⁴⁰

Q.17.: Please describe your evaluation of the FEIS's discussion of proposed mitigative measures to allay the adverse environmental justice impacts of the Crownpoint Project.

A.17.: The FEIS admits that in the absence of mitigative measures, the Crownpoint Project will have significant adverse impacts. FEIS at 4-112-119. To minimize these impacts, the FEIS proposes mitigative measures. *Id.* In my professional opinion, several of the key

⁴⁰ That's not to say that the contamination should not be cleaned up. It should be cleaned up, regardless of whether HRI ever mines at the site, because it remains a potential, if not actual, environmental health problem. HRI's April 1988 Church Rock Environmental Report showed the extent of the contamination in Section 17 and Section 8 in Fig. 2.9-1, which Mr. Franke reproduced as Figure 6 of his testimony report. In late 1993, SRIC and the Water Information Network brought to the attention of the NRC Staff their field observations that cattle were seen grazing on the contaminated lands. *See*, letter from C. Shuey and L. Bird to J. Grimm (December 14, 1993) (ACN 9509060115) ("SRIC Letter"). In light of previous studies showing uptake of radionuclides in livestock that grazed in the New Mexico uranium mining districts, "we fear that unnecessary exposures to livestock and to people who eat the animals may be occurring on a routine basis without the knowledge of the animals' owners or the local communities." SRIC Letter at 3. As late as February 1996, HRI reported to NRC that grazing was still taking place on Section 8 under active leases. *See*, HRI Response to RAI #10 (February 20, 1996) (ACN 9602220389).

mitigative measures should be re-examined, because they are likely to be ineffective in protecting public health in the environmental justice communities of Church Rock and Crownpoint.

Chief among these mitigative measures is the relocation of the Crownpoint drinking water wells. As I have discussed above, the uranium standard proposed for these new wells appears to be unsafe. Moreover, the FEIS does not describe whether there are any suitable locations for replacement wells or the impacts of losing the current wells to contamination. The FEIS admits that Crownpoint doubled in size between 1980 and 1993 but does not discuss the future drinking water supply needs of this growing community. FEIS at 3-56.

Many of the other mitigative measures discussed in the FEIS really just require HRI to submit tests or information that would normally be required in a license application. See Wallace Testimony in support of Intervenors' groundwater presentation, at 26, 53-55, 60, 78-79. In fact, these measures appear to degrade the level of safety provided by a typical NRC license, because they allow HRI to postpone the safety demonstrations until sometime after licensing, rather than prior to licensing when they are subject to more rigorous mandatory review and licensing hearings. See, ENDAUM's and SRIC's written presentation on performance-based licensing issues (December 7, 1998), at 16-17. For example, the license does not require HRI to submit a surety estimate or plan for the proposed mines and mill until after licensing. A surety is already required by NRC regulations for licensing of a source materials facility, and it is my understanding that it must generally be provided before licensing. Id., at 14-15. Therefore, it does not seem to me to constitute a legitimate mitigative measure to take a typical regulatory licensing requirement and postpone compliance until sometime after licensing.

The FEIS admits that construction and operation would have adverse impacts on land use at each of the three sites, but concludes that impacts are not significant because HRI proposes compensating residents required to relocate and grazing rights permittees, along

with performing site restoration and reclamation. FEIS at 4-118, 4-125-126. This attempt at mitigation is unlikely to be effective to protect the local communities. The Church Rock land use surveys demonstrate that most homes in this area have been passed down for several generations, and monetary compensation will not replace the social fabric torn by relocation. Additionally, as Larry J. King and Mitchell Capitan testify, grazing livestock is an important element of Navajo culture. They both state that their lives would not be complete or "free" without owning livestock.

I conclude that these mitigative measures should be re-examined, as they are likely to be ineffective in avoiding significant impacts in the environmental justice communities of Church Rock and Crownpoint.

Q.18.: Please describe your evaluation of the FEIS's discussion of the disparity in the allocation of costs and benefits of the proposed Crownpoint Project with respect to the communities of Church Rock and Crownpoint.

A.18.: In its cost-benefit analysis, the NRC lists several benefits of the project to local communities, primarily jobs, royalties and tax revenues. FEIS at 5-1 to 5-6. The Staff finds that only one cost exists — the risk of contaminating a public water supply, which it finds is completely mitigated by the requirement that HRI pay for the cost of replacement and additional operating costs. *Id.*, at 5-6 to 5-7.

This section is clearly skewed in favor of the project. As Dr. Sheehan testifies, the benefits to the local community are greatly exaggerated in several ways: (1) the claimed employment benefits are overstated given that HRI is faced with laying off trained workers at the company's Texas operations, and HRI exaggerated the wages it will pay to local Navajo employees, (2) the royalty income estimate is based on an unreasonably high market price for uranium and the income will be concentrated among only nine different Navajo allottees, (3) the tax revenues are exaggerated because the Navajo Nation may not have taxing jurisdiction over all of the properties, (4) the state personal property estimate unrealistically assumes HRI will invest more than \$16 million in personal property, (5) the

real property tax estimate is based on unrealistic production value and market price and it does not deduct non-production tax from taxes during production. See Dr. Sheehan testimony in support of ENDAUM and SRIC's cost-benefit presentation at Sections IIC, D, and E (February 19, 1999).

The FEIS also overstates the employment benefits to local residents. The FEIS endorses a local hiring plan, and provisions in royalty leases granting employment preference to allottees. FEIS at 4-96. The FEIS also assumes that of 100 jobs for which local residents would qualify, all of the jobs would go to locals. FEIS at 4-97 and Table 5.4 at 5-5. However, these preferential systems appear to conflict with Navajo law requires employers to advertise throughout the Navajo Nation and to hire the most qualified Navajo applicants. Navajo Nation NPEA, 15 N.N.C. § 604(A)(6) (1995). Given the high unemployment rate on the Navajo reservation, it is likely that HRI's job announcements will attract applicants from all over the reservation. Favoritism of local residents or allottees would violate this statute. Thus, the FEIS's assumptions regarding local employment benefits are unfounded.

In addition, it is important that local residents likely will not enjoy the full benefit of New Mexico state taxes. Many of the roads around Crownpoint and Church Rock, including Navajo Highway 49 between Pinedale and Smithlake and Navajo Highway 9 between Crownpoint and U.S. Route 666 near Gallup, are maintained by the Navajo Nation or the BIA, not New Mexico. Law enforcement is provided by the Navajo Nation police, not the state or county police forces.

On the other side of the ledger, there are many costs of the project that are ignored or minimized by the FEIS — the risks to public health from radionuclide emissions, groundwater contamination and liquid waste disposal; the cost of groundwater consumption, risk of loss of cultural resources, and the risk of loss of Navajo land uses are just a few. See, Dr. Sheehan testimony at Section III. The local community is not going to benefit from the imposition of this project in any substantial way, and yet there are substantial risks to the environment and to public health.

Q.19.: Does the FEIS raise any concerns for you regarding procedural inequity?

A.19.: Yes. As I have described above, there are many significant aspects in which the FEIS is incomplete or inaccurate. In other respects the FEIS is downright misleading. As official government documents published by agencies charged with protecting public health and the environment, Environmental Impact Statements carry tremendous credibility and weight with the general public, government decisionmakers, political leaders, and the media. It is generally assumed, and indeed is required by NEPA, that the government can back up what it says or promises. But procedural inequity creeps in when such official decisionmaking documents ignore or misrepresent significant impacts, or represent benefits for which there is no documented support — such as giving unfounded assurance that existing pollution that is harming the community will be cleaned up if a project goes forward.

Procedural inequity is also demonstrated by the NRC's failure to circulate, for public comment, a complete and accurate discussion of environmental justice impacts. The DEIS contained little or no discussion of environmental justice, and thus the public has never had a real opportunity to comment on the issue. As discussed in ENDAUM and SRIC's written presentation on NEPA issues, the DEIS that was circulated for comment did not contain any discussion of the principal alternatives and mitigation measures proposed in the FEIS. This violates the CEQ guidance that agencies "should assure meaningful community representation in the process." *Id.* at 2. It also violates the CEQ guidance that the identification of disproportionately high and adverse health and environmental effects in a minority, low-income community should "heighten agency attention to alternatives (including alternative sites), mitigation strategies, monitoring needs, *and preferences expressed by the affected community or population.*" CEQ Guidance at 10. The affected community is not able to make meaningful comment on alternatives, mitigation measures, monitoring, or any other measures designed to reduce adverse impacts on it if those proposals are never circulated for public comment.

The NRC's whole licensing approach to the Crownpoint Project is another example

of procedural inequity. As discussed in ENDAUM's and SRIC's written presentation on performance-based licensing (at 16-17), the HRI license postpones any requirement for a demonstration of many key safety and environmental requirements until after licensing, when they are no longer subject to a public hearing. This is an unusual procedure, neither legal nor common to NRC practice. Moreover, these postponed safety and environmental demonstrations are touted in the FEIS as mitigative measures, when most actually constitute measures that are or should be required to demonstrate the safety of the project in any case. The performance-based licensing approach appears to be designed to preclude public participation on many important safety and environmental issues raised by the HRI license. Thus, it exemplifies procedural inequity.

As discussed above, procedural inequity also stems from the differential application of standards to different groups. The EPA's UMTRA⁴¹ uranium standard of 0.044 mg/L was used to protect the health of the neighbors of the Fernald nuclear factory in Ohio. Yet, the NRC proposes a uranium standard of 0.44 mg/L for the Crownpoint project, even for the relocated Crownpoint municipal supply wells. The NRC is applying a standard that is *10 times less protective* than the standard used on Ohio, to residents of Church Rock and Crownpoint. This raises the question, if the residents of Church Rock and Crownpoint were more well-off and politically powerful, would the NRC still impose such a weakened standard on them?

It is also disturbing that, for a period of many years, residents of Church Rock have been exposed to unsafe levels of radiation caused by the historical uranium mining and milling activities in the area, and still there is no ongoing environmental monitoring or health surveillance in this affected community. Despite the CEQ's guidance that the identification of disparate impacts on environmental justice communities should "heighten agency

⁴¹"UMTRA" stands for Uranium Mill Tailings Remedial Action program, a project of the U.S. Department of Energy to remediate former uranium mill tailings sites that were generated by private companies operating under contracts to the federal government.

attention” to “monitoring needs,” CEQ Guidance at 10, the FEIS does not discuss this issue at all.

Q.16.: Does this conclude your testimony?

Q.16: Yes.

AFFIRMATION

STATE OF GEORGIA)
)
COUNTY OF _____)

ss.

I hereby affirm that the opinions expressed in the foregoing testimony constitute my best professional judgment, and that the factual representations are true and correct to the best of my knowledge.

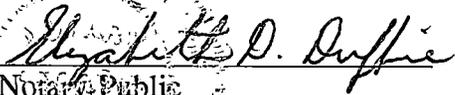


Robert D. Bullard

Date: 2/17/99

Subscribed and sworn before me, the undersigned, a notary public, on this 17 day of February, 1999.

My commission expires on _____
Notary Public, DeKalb County, Georgia
My Commission Expires Feb. 27, 2000

Notary Public

VITA

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Ware Professor of Sociology and Director of the Environmental Justice Resource Center, Clark Atlanta University (1994 - Present)

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Professor, University of California, Riverside (1990- 1994), Associate Professor, University of California, Riverside, (1989-1990)

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Urban Planner - City of Des Moines, Iowa (1971-1974)

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LECTURES AND PRESENTATIONS (1990-PRESENT):

Bullard, R.D. "Environmental Blackmail and the Black Community." National Conference on Toxics and Race, University of Michigan, Ann Arbor, MI (January, 1990).

Bullard, R.D. "Toxics, Environmental Justice, and Earth Day 1990." National Rainbow Coalition/Earth Day 90 Toxics Conference, Atlanta, GA (March, 1990).

Bullard, R.D. "Race and Class in the Urban South: Resolving the Unfinished Agenda in the 1990s." Association of Social and Behavioral Scientists, Tallahassee, FL (March, 1990).

Bullard, R.D. "Minority Environmental Problems and the Media." Scientists' Institute for Public Information Conference on Environmental Reporting, Case Western University, Cleveland, OH, (March, 1990).

Bullard, R.D. "Environmental Dumping: Houston as Microcosm." The Other Economic Summit (TOES), Houston, TX (July, 1990).

Bullard, R.D. "African Americans and Environmental Sciences: Research, Policy, and Networking." National Conference on Blacks in Science, Wake Forest University, Winston-Salem, NC (July, 1990).

Bullard, R.D. "African Americans and the New South: The Illusion of Inclusion." American Sociological Association, Washington, DC (August, 1990).

Bullard, R.D. "Toxics and Minority Communities," Scientists' Institute for Policy Information Conference on Environmental Reporting, Rutgers University, New Brunswick, NJ (November, 1990).

Bullard, R.D. "Use of Demographic Data to Evaluate Minority Environmental Health Issues," National Minority Environmental Health Conference, Agency for Toxic Substances and Disease Registry, Atlanta, GA (December, 1990).

Bullard, R.D. "Race, Class, and the Environment," National Association for Science, Technology, and Society, Alexandria, VA (February, 1991).

Bullard, R.D. "Building Equity into Interstate and Intrastate Waste Facility Siting Strategies," The Keystone Center Conference on Interstate Transport of Municipal and

Hazardous Waste, Annapolis, MD (May, 1991).

Bullard, R.D. "Environmental Justice for All," National Wildlife Federation Scholar in Residence Symposium, Washington, DC (August, 1991).

Bullard, R.D. "Organizing against Environmental Racism," American Sociological Association Annual Meeting, Cincinnati, OH (August, 1991).

Bullard, R.D. "Environmental Inequities, Disproportionate Impact and Discrimination," California State Bar Association Annual Meeting, Anaheim, CA (September 1991).

Bullard, R.D. "Science, Technology, and Environmental Inequities," Rensselaer Polytechnic Institute Conference on the Greening of Technology and Environmental Reporting, Troy, NY (September, 1991).

Bullard, R.D. "Historical Roots of the Environmental Justice Movement: An African American Perspective," The First National People of Color Environmental Leadership Summit, Washington, DC (October, 1991).

Bullard, R.D. "Environmental Health Issues in the African American Community," African American Health Agenda Conference, NAACP Legal Defense Fund and Johns Hopkins University School of Hygiene and Public Health, Baltimore, MD (November, 1991).

Bullard, R.D. "Environmental Equity vs. Environmental Justice." Environmental Justice Forum, University of Virginia, Charlottesville, VA (February, 1992).

Bullard, R.D. "Lead and Environmental Equity in Minority Communities." Testimony presented at the U.S. House of Representatives Energy and Environment Subcommittee Hearing, Washington, DC (February, 1992).

Bullard, R.D. "Environmental Racism and the Toxic Threat." American Association for the Advancement of Science Annual Meeting, Chicago (February, 1992).

Bullard, R.D. "Race and Environmental Justice in the United States." Earth Rights and Responsibilities Conference, Yale Law School, New Haven, CT (April, 1992).

Bullard, R.D. "Endangered Communities: A Framework for Addressing Environmental Inequities." Friends of the Earth Groundwater Contamination Conference, Memphis, TN (April, 1992).

Bullard, R.D. "Environmental Racism and the Law." American Bar Association Workshop on Environmental Justice/Equity/Racism, Williamsburg, VA (May, 1992).

Bullard, R.D. "Dispute Resolution and Environmental Conflict in Communities of Color." Law & Society Annual Meeting, Philadelphia (May, 1992).

Bullard, R.D. "The Struggle for Environmental and Economic Justice: The U.S. Experience." Earth Summit, Global Forum, Rio de Janeiro, Brazil (June, 1992).

Bullard, R.D. and B.H. Wright, "Science, Public Policy and Environmental Justice." Society for the Social Studies of Science Annual Conference, Gothenberg, Sweden (August, 1992).

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Bullard, R.D. "The Environmental Justice Framework: A Strategy for Addressing Unequal Protection." Resources for the Future Conference on Risk Management, Annapolis, MD, (November, 1992).

Bullard, R.D. "Environmental Inequality and the Law." Keynote Address at the New England Environmental Law Society, Harvard Law School, Cambridge, MA (November, 1992).

Bullard, R.D. "Race, Class, and Environmental Justice," Paper presented at the Annual Meeting of the American Association for the Advancement of Science, Boston, (February, 1993).

Bullard, R.D. "Transportation and Environmental Justice," Paper presented at the Transportation Research Board Annual Conference, Washington, DC (January, 1996).

R.D. Bullard, "Healthy and Sustainable Communities," Paper presented at the American Public Health Association Annual Conference, New York, NY (1996).

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Member of Editorial Board, *Capitalism Nature Socialism*, (1990-Present).

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Member of Editorial Board, *E: The Environmental Magazine* (1992-Present).

Member of "Michigan Group" Ad Hoc Committee, Work Group on Environmental Equity, U.S. Environmental Protection Agency, Washington, DC (1990-1994).

Member of Planning Committee, National People of Color Environmental Leadership Summit, Commission for Racial Justice, New York, NY (1990-1992).

Member of Board of Directors, Alliance to End Childhood Lead Poisoning, Washington, DC (1991-1997).

Member of AAAS Minority Scholars Task Force on Ethics and Values in Science and Technology, Washington, DC (1991-1992).

Member, Ethnic Community Advisory Council, South Coast Air Quality Management District (SCAQMD), Diamond Bar, CA (1992-1994).

Member of Board of Directors, Pesticide Education Center, San Francisco, CA (1992-1994).

Member of Statewide Community Advisory Committee (SCAC) for the California Environmental Protection Agency (CALEPA) Comparative Risk Project (1993-1994).

Member of Editorial Board, *FORUM for Applied Research and Public Policy*, University of Tennessee, Knoxville, (1993-Present).

Member of the National Institute for Environmental Health Sciences (NIEHS) Planning/Protocol Committee for the federal interagency "Symposium on Health Research and Needs to Ensure Environmental Justice" held in Arlington, VA, February 10-12, 1994 (1993-1994).

Member of the American Association for the Advancement of Science (AAAS) Committee on Opportunities in Science (COOS). Washington, DC (1993-1996).

Member of National Research Council Evaluation Panel in Social Sciences for the Ford Foundation Predoctoral Fellowships for Minorities Program. Washington, DC, (1993-1995).

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WEB PAGE DEVELOPED

Supervised the development of the Center's Web page. The site can be reached at:
<http://www.ejrc.cau.edu>

Presidential Documents

Title 3—

Executive Order 12898 of February 11, 1994

The President

Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1-1. IMPLEMENTATION.

1-101. Agency Responsibilities. To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.

1-102. Creation of an Interagency Working Group on Environmental Justice. (a) Within 3 months of the date of this order, the Administrator of the Environmental Protection Agency ("Administrator") or the Administrator's designee shall convene an interagency Federal Working Group on Environmental Justice ("Working Group"). The Working Group shall comprise the heads of the following executive agencies and offices, or their designees: (a) Department of Defense; (b) Department of Health and Human Services; (c) Department of Housing and Urban Development; (d) Department of Labor; (e) Department of Agriculture; (f) Department of Transportation; (g) Department of Justice; (h) Department of the Interior; (i) Department of Commerce; (j) Department of Energy; (k) Environmental Protection Agency; (l) Office of Management and Budget; (m) Office of Science and Technology Policy; (n) Office of the Deputy Assistant to the President for Environmental Policy; (o) Office of the Assistant to the President for Domestic Policy; (p) National Economic Council; (q) Council of Economic Advisers; and (r) such other Government officials as the President may designate. The Working Group shall report to the President through the Deputy Assistant to the President for Environmental Policy and the Assistant to the President for Domestic Policy.

(b) The Working Group shall: (1) provide guidance to Federal agencies on criteria for identifying disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;

(2) coordinate with, provide guidance to, and serve as a clearinghouse for, each Federal agency as it develops an environmental justice strategy as required by section 1-103 of this order, in order to ensure that the administration, interpretation and enforcement of programs, activities and policies are undertaken in a consistent manner;

(3) assist in coordinating research by, and stimulating cooperation among, the Environmental Protection Agency, the Department of Health and Human Services, the Department of Housing and Urban Development, and other agencies conducting research or other activities in accordance with section 3-3 of this order;

(4) assist in coordinating data collection, required by this order;

- (5) examine existing data and studies on environmental justice;
- (6) hold public meetings as required in section 5-502(d) of this order; and
- (7) develop interagency model projects on environmental justice that evidence cooperation among Federal agencies.

1-103. Development of Agency Strategies. (a) Except as provided in section 6-605 of this order, each Federal agency shall develop an agency-wide environmental justice strategy, as set forth in subsections (b)-(e) of this section that identifies and addresses disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. The environmental justice strategy shall list programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to, at a minimum: (1) promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations; (2) ensure greater public participation; (3) improve research and data collection relating to the health of and environment of minority populations and low-income populations; and (4) identify differential patterns of consumption of natural resources among minority populations and low-income populations. In addition, the environmental justice strategy shall include, where appropriate, a timetable for undertaking identified revisions and consideration of economic and social implications of the revisions.

(b) Within 4 months of the date of this order, each Federal agency shall identify an internal administrative process for developing its environmental justice strategy, and shall inform the Working Group of the process.

(c) Within 6 months of the date of this order, each Federal agency shall provide the Working Group with an outline of its proposed environmental justice strategy.

(d) Within 10 months of the date of this order, each Federal agency shall provide the Working Group with its proposed environmental justice strategy.

(e) Within 12 months of the date of this order, each Federal agency shall finalize its environmental justice strategy and provide a copy and written description of its strategy to the Working Group. During the 12 month period from the date of this order, each Federal agency, as part of its environmental justice strategy, shall identify several specific projects that can be promptly undertaken to address particular concerns identified during the development of the proposed environmental justice strategy, and a schedule for implementing those projects.

(f) Within 24 months of the date of this order, each Federal agency shall report to the Working Group on its progress in implementing its agency-wide environmental justice strategy.

(g) Federal agencies shall provide additional periodic reports to the Working Group as requested by the Working Group.

1-104. Reports to the President. Within 14 months of the date of this order, the Working Group shall submit to the President, through the Office of the Deputy Assistant to the President for Environmental Policy and the Office of the Assistant to the President for Domestic Policy, a report that describes the implementation of this order, and includes the final environmental justice strategies described in section 1-103(e) of this order.

Sec. 2-2. FEDERAL AGENCY RESPONSIBILITIES FOR FEDERAL PROGRAMS. Each Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including popu-

lations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin.

Sec. 3-3. RESEARCH, DATA COLLECTION, AND ANALYSIS.

3-301. Human Health and Environmental Research and Analysis. (a) Environmental human health research, whenever practicable and appropriate, shall include diverse segments of the population in epidemiological and clinical studies, including segments at high risk from environmental hazards, such as minority populations, low-income populations and workers who may be exposed to substantial environmental hazards.

(b) Environmental human health analyses, whenever practicable and appropriate, shall identify multiple and cumulative exposures.

(c) Federal agencies shall provide minority populations and low-income populations the opportunity to comment on the development and design of research strategies undertaken pursuant to this order.

3-302. Human Health and Environmental Data Collection and Analysis. To the extent permitted by existing law, including the Privacy Act, as amended (5 U.S.C. section 552a): (a) each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information assessing and comparing environmental and human health risks borne by populations identified by race, national origin, or income. To the extent practical and appropriate, Federal agencies shall use this information to determine whether their programs, policies, and activities have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;

(b) In connection with the development and implementation of agency strategies in section 1-103 of this order, each Federal agency, whenever practicable and appropriate, shall collect, maintain and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding facilities or sites expected to have a substantial environmental, human health, or economic effect on the surrounding populations, when such facilities or sites become the subject of a substantial Federal environmental administrative or judicial action. Such information shall be made available to the public, unless prohibited by law; and

(c) Each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding Federal facilities that are: (1) subject to the reporting requirements under the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. section 11001-11050 as mandated in Executive Order No. 12856; and (2) expected to have a substantial environmental, human health, or economic effect on surrounding populations. Such information shall be made available to the public, unless prohibited by law.

(d) In carrying out the responsibilities in this section, each Federal agency, whenever practicable and appropriate, shall share information and eliminate unnecessary duplication of efforts through the use of existing data systems and cooperative agreements among Federal agencies and with State, local, and tribal governments.

Sec. 4-4. SUBSISTENCE CONSUMPTION OF FISH AND WILDLIFE.

4-401. Consumption Patterns. In order to assist in identifying the need for ensuring protection of populations with differential patterns of subsistence consumption of fish and wildlife, Federal agencies, whenever practicable and appropriate, shall collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. Federal agencies shall communicate to the public the risks of those consumption patterns.

4-402. Guidance. Federal agencies, whenever practicable and appropriate, shall work in a coordinated manner to publish guidance reflecting the latest scientific information available concerning methods for evaluating the human health risks associated with the consumption of pollutant-bearing fish or wildlife. Agencies shall consider such guidance in developing their policies and rules.

Sec. 5-5. PUBLIC PARTICIPATION AND ACCESS TO INFORMATION. (a) The public may submit recommendations to Federal agencies relating to the incorporation of environmental justice principles into Federal agency programs or policies. Each Federal agency shall convey such recommendations to the Working Group.

(b) Each Federal agency may, whenever practicable and appropriate, translate crucial public documents, notices, and hearings relating to human health or the environment for limited English speaking populations.

(c) Each Federal agency shall work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public.

(d) The Working Group shall hold public meetings, as appropriate, for the purpose of fact-finding, receiving public comments, and conducting inquiries concerning environmental justice. The Working Group shall prepare for public review a summary of the comments and recommendations discussed at the public meetings.

Sec. 6-6. GENERAL PROVISIONS.

6-601. Responsibility for Agency Implementation. The head of each Federal agency shall be responsible for ensuring compliance with this order. Each Federal agency shall conduct internal reviews and take such other steps as may be necessary to monitor compliance with this order.

6-602. Executive Order No. 12250. This Executive order is intended to supplement but not supersede Executive Order No. 12250, which requires consistent and effective implementation of various laws prohibiting discriminatory practices in programs receiving Federal financial assistance. Nothing herein shall limit the effect or mandate of Executive Order No. 12250.

6-603. Executive Order No. 12875. This Executive order is not intended to limit the effect or mandate of Executive Order No. 12875.

6-604. Scope. For purposes of this order, Federal agency means any agency on the Working Group, and such other agencies as may be designated by the President, that conducts any Federal program or activity that substantially affects human health or the environment. Independent agencies are requested to comply with the provisions of this order.

6-605. Petitions for Exemptions. The head of a Federal agency may petition the President for an exemption from the requirements of this order on the grounds that all or some of the petitioning agency's programs or activities should not be subject to the requirements of this order.

6-606. Native American Programs. Each Federal agency responsibility set forth under this order shall apply equally to Native American programs. In addition, the Department of the Interior, in coordination with the Working Group, and, after consultation with tribal leaders, shall coordinate steps to be taken pursuant to this order that address Federally-recognized Indian Tribes.

6-607. Costs. Unless otherwise provided by law, Federal agencies shall assume the financial costs of complying with this order.

6-608. General. Federal agencies shall implement this order consistent with, and to the extent permitted by, existing law.

6-609. Judicial Review. This order is intended only to improve the internal management of the executive branch and is not intended to, nor does it create any right, benefit, or trust responsibility, substantive or procedural,

enforceable at law or equity by a party against the United States, its agencies, its officers, or any person. This order shall not be construed to create any right to judicial review involving the compliance or noncompliance of the United States, its agencies, its officers, or any other person with this order.

William Clinton

THE WHITE HOUSE,
February 11, 1994.

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Editorial note: For the memorandum that was concurrently issued on Federal environmental program reform, see issue No. 6 of the *Weekly Compilation of Presidential Documents*.

Environmental Justice

Guidance Under the National Environmental Policy Act



Council on Environmental Quality

ENVIRONMENTAL JUSTICE
Guidance Under the
National Environmental Policy Act



**Council on Environmental Quality
Executive Office of the President
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December 10, 1997**

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I.

Introduction

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,"¹ provides that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." The Executive Order makes clear that its provisions apply fully to programs involving Native Americans.

In the memorandum to heads of departments and agencies that accompanied Executive Order 12898, the President specifically recognized the importance of procedures under the National Environmental Policy Act (NEPA)² for identifying and addressing environmental justice concerns. The memorandum states that "each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by [NEPA]." The memorandum particularly emphasizes the importance of NEPA's public participation process, directing that "each Federal agency shall provide opportunities for community input in the NEPA process." Agencies are further directed to "identify potential effects and mitigation measures in consultation with affected communities, and improve the accessibility of meetings, crucial documents, and notices."

The Council on Environmental Quality (CEQ) has oversight of the Federal government's compliance with Executive Order 12898 and NEPA.³ CEQ, in consultation with EPA and other affected agencies, has developed this guidance to further assist Federal agencies with their NEPA procedures so that environmental justice concerns are effectively identified and addressed. To the extent practicable and permitted by law, agencies may supplement this guidance with more specific procedures tailored to particular programs or activities of an individual department, agency, or office.

¹ 59 Fed. Reg. 7629 (1994).

² 42 U.S.C. §4321 *et seq.*

³ Certain oversight functions in the Executive Order are delegated to the Deputy Assistant to the President for Environmental Policy. Following the merger of the White House Office on Environmental Policy with CEQ, the Chair of CEQ assumed those functions. The Environmental Protection Agency (EPA) has lead responsibility for implementation of the Executive Order as Chair of the Interagency Working Group (IWG) on Environmental Justice.

II.

Executive Order 12898 and the Presidential Memorandum

In addition to the general directive in Executive Order 12898 that each agency identify and address, as appropriate, "disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations,"⁴ there are several provisions of the Executive Order and a number of supporting documents to which agencies should refer when identifying and addressing environmental justice concerns in the NEPA process.

First, the Executive Order itself contains particular emphasis on four issues that are pertinent to the NEPA process:

- The Executive Order requires the development of agency-specific environmental justice strategies.⁵ Thus, agencies have developed and should periodically revise their strategies providing guidance concerning the types of programs, policies, and activities that may, or historically have, raised environmental justice concerns at the particular agency. These guidances may suggest possible approaches to addressing such concerns in the agency's NEPA analyses, as appropriate.
- The Executive Order recognizes the importance of research, data collection, and analysis, particularly with respect to multiple and cumulative exposures to environmental hazards for low-income populations, minority populations, and Indian tribes.⁶ Thus, data on these exposure issues should be incorporated into NEPA analyses as appropriate.⁷
- The Executive Order provides for agencies to collect, maintain, and analyze information on patterns of subsistence consumption of fish, vegetation, or wildlife.⁸ Where an agency action may affect fish, vegetation, or wildlife, that agency action may

⁴ Executive Order No. 12898, 59 Fed. Reg. at 7630 (Section 1-101).

⁵ *Id.* at 7630 (Section 1-103).

⁶ *Id.* at 7631 (Section 3-3).

⁷ For further information on considering cumulative effects, see *Considering Cumulative Effects Under The National Environmental Policy Act* (Council on Environmental Quality, Executive Office of the President, Jan. 1997)

⁸ *Id.* at 7631 (Section 4-401).

also affect subsistence patterns of consumption and indicate the potential for disproportionately high and adverse human health or environmental effects on low-income populations, minority populations, and Indian tribes.

- The Executive Order requires agencies to work to ensure effective public participation and access to information.⁹ Thus, within its NEPA process and through other appropriate mechanisms, each Federal agency shall, "wherever practicable and appropriate, translate crucial public documents, notices and hearings, relating to human health or the environment for limited English speaking populations." In addition, each agency should work to "ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public."¹⁰

Second, the memorandum accompanying the Executive Order identifies four important ways to consider environmental justice under NEPA.

- Each Federal agency should analyze the environmental effects, including human health, economic, and social effects of Federal actions, including effects on minority populations, low-income populations, and Indian tribes, when such analysis is required by NEPA.¹¹

- Mitigation measures identified as part of an environmental assessment (EA), a finding of no significant impact (FONSI), an environmental impact statement (EIS), or a record of decision (ROD), should, whenever feasible, address significant and adverse environmental effects of proposed federal actions on minority populations, low-income populations, and Indian tribes.¹²

- Each Federal agency must provide opportunities for effective community participation in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of public meetings, crucial documents, and notices.¹³

- Review of NEPA compliance (such as EPA's review under § 309 of the Clean Air Act)

⁹ *Id.* at 7632 (Section 5-5).

¹⁰ *Id.* at 7632 (Section 5-5).

¹¹ Memorandum from the President to the Heads of Departments and Agencies. Comprehensive Presidential Documents No. 279. (Feb. 11, 1994).

¹² *Id.*

¹³ *Id.*

must ensure that the lead agency preparing NEPA analyses and documentation has appropriately analyzed environmental effects on minority populations, low-income populations, or Indian tribes, including human health, social, and economic effects.¹⁴

Third, the Interagency Working Group (IWG), established by the Executive Order to implement the order's requirements, has developed guidance on key terms in the Executive Order. The guidance, reproduced as Appendix A, reflects a general consensus based on Federal agencies' experience and understanding of the issues presented. Agencies should apply the guidance with flexibility, and may consider its terms a point of departure rather than conclusive direction in applying the terms of the Executive Order.

¹⁴ *Id.*

III.

Executive Order 12898 and NEPA

A. NEPA Generally

NEPA's fundamental policy is to "encourage productive and enjoyable harmony between man and his environment."¹⁵ In the statute, Congress "recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment."¹⁶ The following goals, set forth in NEPA, make clear that attainment of environmental justice is wholly consistent with the purposes and policies of NEPA¹⁷:

- to "assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings"¹⁸;
- to "attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences";¹⁹
- to "preserve important historic, cultural, and natural aspects of our natural heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice"²⁰; and
- to "achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities."²¹

These goals are promoted through the requirement that all agencies of the Federal government shall include in every recommendation or report on proposals for legislation and other

¹⁵ 42 U.S.C. § 4321.

¹⁶ 42 U.S.C. § 4331(c).

¹⁷ 42 U.S.C. § 4331(b).

¹⁸ 42 U.S.C. § 4331(b)(2).

¹⁹ 42 U.S.C. § 4331(b)(3).

²⁰ 42 U.S.C. § 4331(b)(4).

²¹ 42 U.S.C. § 4331(b)(5).

major Federal actions significantly affecting the quality of the human environment, a "detailed statement by the responsible official" on: the environmental impacts of the proposed action; adverse environmental effects that cannot be avoided should the proposal be implemented; alternatives to the proposed action; the relationship between local, short-term uses of man's environment and long-term productivity; and any irreversible or irretrievable commitments of resources involved in the proposed action itself.²²

Preparation of an EA may precede preparation of an EIS, to determine whether a proposed action may "significantly affect" the quality of the human environment. The EA either will support a finding of no significant impact (FONSI), or will document the need for an EIS. Agency procedure at each step of this process should be guided by the agency's own NEPA regulations and by the CEQ regulations found at 40 C.F.R. Parts 1500-1508.

B. Principles for Considering Environmental Justice under NEPA

Environmental justice issues may arise at any step of the NEPA process and agencies should consider these issues at each and every step of the process, as appropriate. Environmental justice issues encompass a broad range of impacts covered by NEPA, including impacts on the natural or physical environment and interrelated social, cultural and economic effects.²³ In preparing an EIS or an EA, agencies must consider both impacts on the natural or physical environment and related social, cultural, and economic impacts.²⁴ Environmental justice concerns may arise from impacts on the natural and physical environment, such as human health or ecological impacts on minority populations, low-income populations, and Indian tribes, or from related social or economic impacts.

1. General Principles

Agencies should recognize that the question of whether agency action raises environmental justice issues is highly sensitive to the history or circumstances of a particular community or population, the particular type of environmental or human health impact, and the nature of the proposed action itself. There is not a standard formula for how environmental justice issues should be identified or addressed. However, the following six principles provide general guidance.

²² 42 U.S.C. § 4332(c).

²³ The CEQ implementing regulations define "effects" or "impacts" to include "ecological...aesthetic, historic, cultural, economic, social or health, whether direct, indirect or cumulative." 40 C.F.R. 1508.8.

²⁴ 40 C.F.R. 1508.14.

- Agencies should consider the composition of the affected area, to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the proposed action, and if so whether there may be disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, or Indian tribes.

- Agencies should consider relevant public health data and industry data concerning the potential for multiple or cumulative exposure to human health or environmental hazards in the affected population and historical patterns of exposure to environmental hazards, to the extent such information is reasonably available. For example, data may suggest there are disproportionately high and adverse human health or environmental effects on a minority population, low-income population, or Indian tribe from the agency action. Agencies should consider these multiple, or cumulative effects, even if certain effects are not within the control or subject to the discretion of the agency proposing the action.

- Agencies should recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed agency action. These factors should include the physical sensitivity of the community or population to particular impacts; the effect of any disruption on the community structure associated with the proposed action; and the nature and degree of impact on the physical and social structure of the community.

- Agencies should develop effective public participation strategies. Agencies should, as appropriate, acknowledge and seek to overcome linguistic, cultural, institutional, geographic, and other barriers to meaningful participation, and should incorporate active outreach to affected groups.

- Agencies should assure meaningful community representation in the process. Agencies should be aware of the diverse constituencies within any particular community when they seek community representation and should endeavor to have complete representation of the community as a whole. Agencies also should be aware that community participation must occur as early as possible if it is to be meaningful.

- Agencies should seek tribal representation in the process in a manner that is consistent with the government-to-government relationship between the United States and tribal governments, the federal government's trust responsibility to federally-recognized tribes, and any treaty rights.

2. Additional Considerations

The preceding principles must be applied in light of these further considerations that are

pertinent to any analysis of environmental justice under NEPA.

- The Executive Order does not change the prevailing legal thresholds and statutory interpretations under NEPA and existing case law. For example, for an EIS to be required, there must be a sufficient impact on the physical or natural environment to be "significant" within the meaning of NEPA. Agency consideration of impacts on low-income populations, minority populations, or Indian tribes may lead to the identification of disproportionately high and adverse human health or environmental effects that are significant and that otherwise would be overlooked.²⁵
- Under NEPA, the identification of a disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Indian tribe does not preclude a proposed agency action from going forward, nor does it necessarily compel a conclusion that a proposed action is environmentally unsatisfactory. Rather, the identification of such an effect should heighten agency attention to alternatives (including alternative sites), mitigation strategies, monitoring needs, and preferences expressed by the affected community or population.
- Neither the Executive Order nor this guidance prescribes any specific format for examining environmental justice, such as designating a specific chapter or section in an EIS or EA on environmental justice issues. Agencies should integrate analyses of environmental justice concerns in an appropriate manner so as to be clear, concise, and comprehensible within the general format suggested by 40 C.F.R. § 1502.10.

C. Considering Environmental Justice in Specific Phases of the NEPA Process

While appropriate consideration of environmental justice issues is highly dependent upon the particular facts and circumstances of the proposed action, the affected environment, and the affected populations, there are opportunities and strategies that are useful at particular stages of the NEPA process.

1. Scoping

During the scoping process, an agency should preliminarily determine whether

²⁵ Title VI of the Civil Rights Act of 1964, U.S.C. 2000d *et seq.*, and agency implementing regulations, prohibit recipients of federal financial assistance from taking actions that discriminate on the basis of race, sex, color, national origin, or religion. If an agency is aware that a recipient of federal funds may be taking action that is causing a racially discriminatory impact, the agency should consider using Title VI as a means to prevent or eliminate that discrimination.

an area potentially affected by a proposed agency action may include low-income populations, minority populations, or Indian tribes, and seek input accordingly. When the scoping process is used to develop an EIS or EA, an agency should seek input from low income populations, minority populations, or Indian tribes as early in the process as information becomes available.²⁶ Any such determination, as well as the basis for the determination, should be more substantively addressed in the appropriate NEPA documents and communicated as appropriate during the NEPA process.

If an agency identifies any potentially affected minority populations, low-income populations, or Indian tribes, the agency should develop a strategy for effective public involvement in the agency's determination of the scope of the NEPA analysis. Customary agency practices for notifying the public of a proposed action and subsequent scoping and public events may be enhanced through better use of local resources, community and other nongovernmental organizations, and locally targeted media.

Agencies should consider enhancing their outreach through the following means:

- Religious organizations (e.g., churches, temples, ministerial associations);
- Newspapers, radio and other media, particularly media targeted to low-income populations, minority populations, or Indian tribes;
- Civic associations;
- Minority business associations;
- Environmental and environmental justice organizations;
- Legal aid providers;
- Homeowners', tenants', and neighborhood watch groups;
- Federal, state, local, and tribal governments;
- Rural cooperatives;
- Business and trade organizations;
- Community and social service organizations;
- Universities, colleges, vocational and other schools;
- Labor organizations;
- Civil rights organizations;
- Local schools and libraries;
- Senior citizens' groups;
- Public health agencies and clinics; and
- The Internet and other electronic media.

²⁶ For more information on scoping, see Memorandum from Nicolas C. Yost, Scoping Guidance (Council on Environmental Quality, Executive Office of the President, April 30, 1981).

The participation of diverse groups in the scoping process is necessary for full consideration of the potential environmental impacts of a proposed agency action and any alternatives. By discussing and informing the public of the emerging issues related to the proposed action, agencies may reduce misunderstandings, build cooperative working relationships, educate the public and decisionmakers, and avoid potential conflicts. Agencies should recognize that the identity of the relevant "public" may evolve during the process and may include different constituencies or groups of individuals at different stages of the NEPA process. This may also be the appropriate juncture to begin government-to-government consultation with affected Indian tribes and to seek their participation as cooperating agencies. For this participation to be meaningful, the public should have access to enough information so that it is well informed and can provide constructive input.

The following information may help inform the public during the scoping process:

- A description of the proposed action;
- An outline of the anticipated schedule for completing the NEPA process, with key milestones;
- An initial list of alternatives (including alternative sites, if possible) and potential impacts;
- An initial list of other existing or proposed actions, Federal and non-Federal, that may have cumulative impacts;
- Maps, drawings, and any other appropriate material or references;
- An agency point of contact;
- Timely notice of locations where comments will be received or public meetings held;
- Any telephone number or locations where further information can be obtained;
- Examples of past public comments on similar agency actions.

Thorough scoping is the foundation for the analytical process and provides an early opportunity for the public to participate in the design of alternatives for achieving the goals and objectives of the proposed agency action.

2. Public Participation

Early and meaningful public participation in the federal agency decision making process is a paramount goal of NEPA. CEQ's regulations require agencies to make diligent efforts to involve the public throughout the NEPA process. Participation of low-income populations, minority populations, or tribal populations may require adaptive or innovative approaches to overcome linguistic, institutional, cultural, economic, historical, or other potential barriers to effective participation in the decision-making processes of Federal agencies under customary NEPA procedures. These barriers may range from agency failure to provide translation of documents to the scheduling of meetings at times and in places that are not convenient to working families.

The following steps may be considered, as appropriate, in developing an innovative strategy for effective public participation:

- Coordination with individuals, institutions, or organizations in the affected community to educate the public about potential health and environmental impacts and enhance public involvement;
- Translation of major documents (or summaries thereof), provision of translators at meetings, or other efforts as appropriate to ensure that limited-English speakers potentially affected by a proposed action have an understanding of the proposed action and its potential impacts;
- Provision of opportunities for limited-English speaking members of the affected public to provide comments throughout the NEPA process;
- Provision of opportunities for public participation through means other than written communication, such as personal interviews or use of audio or video recording devices to capture oral comments;
- Use of periodic newsletters or summaries to provide updates on the NEPA process to keep the public informed;
- Use of different meeting sizes or formats, or variation on the type and number of media used, so that communications are tailored to the particular community or population;
- Circulation or creation of specialized materials that reflect the concerns and sensitivities of particular populations such as information about risks specific to subsistence consumers of fish, vegetation, or wildlife;
- Use of locations and facilities that are local, convenient, and accessible to the disabled, low-income and minority communities, and Indian tribes; and
- Assistance to hearing-impaired or sight-impaired individuals.

3. Determining the Affected Environment

In order to determine whether a proposed action is likely to have disproportionately high and adverse human health or environmental effects on low-income populations, minority populations, or Indian tribes, agencies should identify a geographic scale for which they will obtain demographic information on the potential impact area. Agencies may use demographic data available from the Bureau of the Census (BOC) to identify the composition of the potentially affected population. Geographic distribution by race, ethnicity, and income, as well as a delineation of tribal lands and resources, should be examined. Census data are available in published formats, and on CD-ROM available through the BOC. This data also is available from a number of local, college, and university libraries, and the World Wide Web. Agencies may also find that Federal, tribal, state and local health, environmental, and economic agencies have useful demographic information and studies, such as the Landview II system, which is used by the BOC to assist in utilizing data from a geographic information system (GIS). Landview II has proven to be a low-cost, readily available means of graphically accessing environmental justice data. These approaches already should be incorporated into current NEPA compliance.

Agencies should recognize that the impacts within minority populations, low-income populations, or Indian tribes may be different from impacts on the general population due to a community's distinct cultural practices. For example, data on different patterns of living, such as subsistence fish, vegetation, or wildlife consumption and the use of well water in rural communities may be relevant to the analysis. Where a proposed agency action would not cause any adverse environmental impacts, and therefore would not cause any disproportionately high and adverse human health or environmental impacts, specific demographic analysis may not be warranted. Where environments of Indian tribes may be affected, agencies must consider pertinent treaty, statutory, or executive order rights and consult with tribal governments in a manner consistent with the government-to-government relationship.

4. Analysis

When a disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Indian tribe has been identified, agencies should analyze how environmental and health effects are distributed within the affected community. Displaying available data spatially, through a GIS, can provide the agency and the public with an effective visualization of the distribution of health and environmental impacts among demographic populations. This type of data should be analyzed in light of any additional qualitative or quantitative information gathered through the public participation process.

Where a potential environmental justice issue has been identified by an agency, the agency should state clearly in the EIS or EA whether, in light of all of the facts and circumstances, a disproportionately high and adverse human health or environmental impact on minority populations, low-income populations, or Indian tribe is likely to result from the proposed action and any alternatives. This statement should be supported by sufficient information for the public to understand the rationale for the conclusion. The underlying analysis should be presented as concisely as possible, using language that is understandable to the public and that minimizes use of acronyms or jargon.

5. Alternatives

Agencies should encourage the members of the communities that may suffer a disproportionately high and adverse human health or environmental effect from a proposed agency action to help develop and comment on possible alternatives to the proposed agency action as early as possible in the process.

Where an EIS is prepared, CEQ regulations require agencies to identify an environmentally preferable alternative in the record of decision (ROD).²⁷ When the agency has identified a disproportionately high and adverse human health or environmental effect on low-income populations, minority populations, or Indian tribes from either the proposed action or alternatives, the distribution as well as the magnitude of the disproportionate impacts in these communities should be a factor in determining the environmentally preferable alternative. In weighing this factor, the agency should consider the views it has received from the affected communities, and the magnitude of environmental impacts associated with alternatives that have a less disproportionate and adverse effect on low-income populations, minority populations, or Indian tribes.

6. Record of Decision

When an agency reaches a decision on an action for which an EIS was prepared, a public record of decision (ROD) must be prepared that provides information on the alternatives considered and the factors weighed in the decision-making process. Disproportionately high and adverse human health or environmental effects on a low-income population, minority population, or Indian tribe should be among those factors explicitly discussed in the ROD, and should also be addressed in any discussion of whether all practicable means to avoid or minimize environmental and other interrelated effects were adopted. Where relevant, the agency should discuss how these issues are addressed

²⁷ 40 C.F.R. § 1505.2(b)

in any monitoring and enforcement program summarized in the ROD.²⁸

Dissemination of the information in the ROD may provide an effective means to inform the public of the extent to which environmental justice concerns were considered in the decision-making process, and where appropriate, whether the agency intends to mitigate any disproportionately high and adverse human health or environmental effects within the constraints of NEPA and other existing laws. In addition to translating crucial portions of the EIS where appropriate, agencies should provide translation, where practicable and appropriate, of the ROD in non-technical, plain language for limited-English speakers. Agencies should also consider translating documents into languages other than English where appropriate and practical.

7. Mitigation

Mitigation measures include steps to avoid, mitigate, minimize, rectify, reduce, or eliminate the impact associated with a proposed agency action.²⁹ Throughout the process of public participation, agencies should elicit the views of the affected populations on measures to mitigate a disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Indian tribe and should carefully consider community views in developing and implementing mitigation strategies. Mitigation measures identified in an EIS or developed as part of a FONSI should reflect the needs and preferences of affected low-income populations, minority populations, or Indian tribes to the extent practicable.

D. Where no EIS or EA is prepared

There are certain circumstances in which the policies of NEPA apply, and a disproportionately high and adverse human health or environmental impact on low-income populations, minority populations, or Indian tribes may exist, but where the specific statutory requirement to prepare an EIS or EA does not apply. These circumstances may arise because of an exemption from the requirement, a categorical exclusion of specific activities by regulation, or a claim by an agency that another environmental statute establishes the "functional equivalent" of an EIS or EA. For example, neither an EIS nor an EA is prepared for certain hazardous waste facility permits.

In circumstances in which an EIS or EA will not be prepared and a disproportionately high and adverse human health or environmental impact on low-income

²⁸ See 40 C.F.R. § 1505.2(c).

²⁹ See 40 C.F.R. § 1508.20.

populations, minority populations, or Indian tribes may exist, agencies should augment their procedures as appropriate to ensure that the otherwise applicable process or procedure for a federal action addresses environmental justice concerns. Agencies should ensure that the goals for public participation outlined in this guidance are satisfied to the fullest extent possible. Agencies also should fully develop and consider alternatives to the proposed action whenever possible, as would be required by NEPA.

IV.

Regulatory Changes

Consistent with the obligation of all agencies to promote consideration of environmental justice under NEPA and in all of their programs and activities, agencies that promulgate or revise regulations, policies, and guidances under NEPA or under any other statutory scheme should consult with CEQ and EPA to ensure that the principles and approaches presented in this guidance are fully incorporated into any new or revised regulations, policies, and guidances.

V.

Effect of this Guidance

Agencies should apply, and comply with, this guidance prospectively. If an agency has made substantial investments in NEPA compliance, or public participation with respect to a particular agency action, prior to issuance of this guidance, the agency should ensure that application of this guidance does not result in additional delays or costs of compliance.

This guidance is intended to improve the internal management of the Executive Branch with respect to environmental justice under NEPA. The guidance interprets NEPA as implemented through the CEQ regulations in light of Executive Order 12898. It does not create any rights, benefits, or trust obligations, either substantive or procedural, enforceable by any person, or entity in any court against the United States, its agencies, its officers, or any other person.



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

March 24, 1995

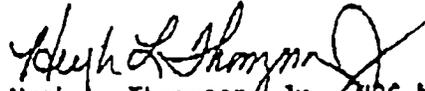
Carol Browner, Chair
Environmental Justice Interagency
Working Group
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20451

Dear Ms. Browner:

The enclosed Environmental Justice Strategy is provided by the Nuclear Regulatory Commission (NRC) in accordance with the President's Executive Order No. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." Also enclosed is a description of specific current projects where NRC is addressing environmental justice.

If you have any questions, I can be reached at (301) 415-1713.

Sincerely,


Hugh L. Thompson, Jr., NRC Member
Environmental Justice Interagency
Working Group

Enclosures:
As stated

**U.S. NUCLEAR REGULATORY COMMISSION
ENVIRONMENTAL JUSTICE STRATEGY
MARCH 1995**

Introduction:

The Nuclear Regulatory Commission (NRC) was created by the Energy Reorganization Act of 1974 as an independent regulatory agency. The mission of the NRC is to assure that civilian uses of nuclear materials in the United States---in nuclear power plants, fuel cycle plants, and in medical, industrial and research applications---are carried out with proper regard for the protection of the public health and safety, of the environment and of national security. The NRC is not a "land management" agency, i.e., it neither sites, owns, nor manages facilities or properties. Therefore, the President's February 11, 1994, Executive Order "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" and the accompanying Presidential memorandum have been determined to primarily apply to our efforts to fulfill the requirements of the National Environmental Policy Act (NEPA) as an integral part of NRC's licensing process.

In this regard, the NRC is committed to giving careful consideration to the Council on Environmental Quality (CEQ) guidelines on how to take environmental justice¹ into account under NEPA. However, pending receipt of these guidelines, the NRC has developed its initial environmental justice implementation strategy based on the five principles discussed below.

Background:

The President's Executive Order directs all Federal agencies to develop, according to prescribed timetables, strategies for assuring environmental justice in their programs, policies, and activities. The Presidential memorandum to all agencies is a reminder of relevant provisions of existing law, including the requirement to consider, when environmental impact statements and other environmental documents are prepared, the effects of Federal actions on minority and low-income communities. Although independent agencies, such as the NRC, were only requested to comply with the Executive Order, the Chairman, in his March 31, 1994 letter to the President, indicated that the NRC would endeavor to carry out the measures set forth in the Executive Order, and the accompanying memorandum.

¹ For purposes of this document, the NRC is using the following working definition of environmental justice: environmental justice means the fair treatment and meaningful involvement of all people, regardless of race, ethnicity, culture, income or educational level with respect to the development, implementation and enforcement of environmental laws, regulations and policies.

Principles of Environmental Justice Implementation:

The goal of the NRC's Environmental Justice Implementation Strategy is to integrate environmental justice into the conduct of all pertinent activities at the agency primarily in the NRC's fulfillment of its NEPA responsibilities. The Strategy contains five principles of implementation. The first three principles are institutional in nature and serve as the foundation for the last two principles which are operational in nature, i.e., they address specific activities. The principles emulate the "Principles of Good Regulation" which have been part of NRC policy for several years.

Integration of Environmental Justice into NRC's NEPA Activities

NRC is committed to integrating environmental justice into NRC's NEPA activities. Greater emphasis will be placed in discussing impacts on minority and low-income populations when preparing agency NEPA documents such as Environmental Impact Statements (EIS), supplemental EISs, and where appropriate, Environmental Assessments.

Continue senior management involvement

The NRC Environmental Justice Group, whose members are senior agency officials, will continue to provide guidance in this area. An Environmental Justice Coordinator has been appointed to ensure appropriate policy information flow among the different entities within the NRC, as well as with outside interested members of the public.

Openness and Clarity

Nuclear regulation is the public's business, and must be transacted publicly and candidly. Agency positions should be readily understood and easily applied.² This is of particular import when dealing with environmental justice issues.

Seeking and Welcoming Public Participation

The NRC maintains regular communication with a broad spectrum of entities, such as the States, Indian Tribes, members of the public and other Federal agencies. Outreach programs such as the Enhanced Participatory Rulemaking, open meeting policy, and scheduled meetings with Agreement States are being implemented. The NRC management is committed to improving our outreach efforts with stakeholders, including minority and low-income communities, and welcoming their input.

² From the agency's "Principles of Good Regulations" issued in January 17, 1991, announcement #6.

Continue Review and Monitoring of Title VI Activities

The NRC's financial assistance programs under Title VI of the Civil Rights Act of 1964 are limited to funding training and travel under Section 274 of the Atomic Energy Act of 1954 as amended, in connection with States assuming certain regulatory authority over specified nuclear materials, and the award of grants for the support of basic and applied scientific research and for the exchange of scientific information. 10 CFR Part 4 calls for nondiscrimination with respect to race, color, national origin and sex in any program or activity receiving Federal financial assistance from the NRC. NRC is committed to monitoring this activity.

Implementation:

The NRC's statutory offices---the Office of Nuclear Reactor Regulation which regulates nuclear power plants and research reactors; the Office of Nuclear Material Safety and Safeguards which regulates materials uses, fuel cycle facilities and waste disposal facilities; and the Office of Nuclear Regulatory Research responsible for rulemakings and confirmatory research---will assess their existing environmental activities and integrate environmental justice into these activities, as appropriate.

SPECIFIC PROJECTS WHERE NRC IS ADDRESSING
ENVIRONMENTAL JUSTICE

- The staff of the Office of Nuclear Reactor Regulation (NRR) recently performed an evaluation of environmental justice in preparing its draft supplement to the Final Environmental Statement Related to the Operation of Watts Bar Nuclear Plant Units 1 and 2. The environmental justice review was performed in two phases. In the first phase, the staff reviewed recent economic, racial, and ethnic information for the Watts Bar Nuclear (WBN) Plant region and concluded that the WBN Plant is located in a predominately non-minority, low-income area. Input to the staff's evaluation was solicited from the public during the public comment period. No comments were received on environmental justice. The staff then considered in the second phase whether the low-income community near the WBN Plant is expected to experience disproportionately high and adverse human health or environmental effects and concluded the community would not experience such impacts. The Environmental Protection Agency did not comment on environmental justice during its review of the draft supplement. The WBN site review is providing the NRC with a means to begin assessing the effectiveness of its NEPA process in addressing environmental justice issues in its licensing activities. Additionally, the "Environmental Standard Review Plan for the Environmental Review of Construction Permit Applications for Nuclear Power Plants," ESRP (NUREG-0550), will include staff review guidance on evaluation of environmental justice. NRR intends to utilize workshops and media announcements to solicit input from affected minority communities. NRR anticipates gaining considerable information in this project relative to demonstrating the feasibility of addressing environmental justice issues.
- NRR conducts an extensive public scoping process (i.e., workshops, local town meetings, etc.) in the preparation of environmental impact statements for major licensing actions in order to solicit input from the public on the issues to be reviewed. This scoping process will, to the maximum extent possible, include specific solicitations from minority and low-income communities on environmental justice issues. Additionally, environmental impact statements are published in draft in order to solicit public comments prior to the proposed actions being taken. Public comment and opportunity for hearing are solicited via Federal Register notice.
- Louisiana Energy Services (LES) applied to the NRC in January 1991, for a license to build a uranium enrichment plant in Claiborne Parish, Louisiana. Northern Louisiana, including Claiborne Parish, is an economically depressed area, and the proposed site is near two small communities populated almost entirely by African Americans. The Office of Nuclear Material Safety and Safeguards (NMSS) issued the Draft Environmental Impact Statement in November 1993. Since the Executive

Order had not been issued as of that date, there was no discussion of environmental justice in the Draft EIS, although there was a discussion of the socio-economic impacts of the proposed action. The Final Environmental Impact Statement was issued in August 1994. It contains a discussion of environmental justice, including a description of the surrounding neighborhoods, the site selection process and a consideration of whether there was possible discrimination in the process, and possible disproportionate impact. The statement concludes that there is no evidence of discrimination, and that there will be no significant disproportionate impacts on minorities or economically disadvantaged persons.

- The Office of Nuclear Regulatory Research (RES) is using an enhanced participatory process for developing radiological criteria for decommissioning. As part of this process, the NRC conducted a series of seven workshops from January through May 1993. Workshop participants represented a broad spectrum of interests including interests related to environmental justice.

DRAFT
STANDARD REVIEW PLAN
for *In Situ* Leach Uranium
Extraction License Applications

Manuscript Completed: September 1997
Date Published: October 1997

Division of Waste Management
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001



APPENDIX B

ENVIRONMENTAL JUSTICE IN NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 DOCUMENTS

Background

On February 11, 1984, the President signed Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which directs all federal agencies to develop strategies for considering environmental justice in their programs, policies, and activities. Environmental justice is described in the Executive Order as "identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." The Nuclear Regulatory Commission (NRC) will consider the Council on Environmental Quality (CEQ) guidelines on how to take environmental justice into account when preparing documents under the National Environmental Policy Act (NEPA). This procedure provides interim guidance on where and how environmental justice is to be handled in NEPA documents. When the CEQ guidelines are available, this interim procedure will be revised, as required. Nuclear Regulatory Commission Office of Nuclear Material Safety and Safeguards policy is presented below.

Policy

It is the policy of the Office of Nuclear Material Safety and Safeguards (NMSS) to address environmental justice in every environmental impact statement (EIS) and every supplement to an EIS that is issued by NMSS. Except in special cases, environmental justice need not be addressed for environmental assessments (EAs) in which a finding of no significant impact (FONSI) is made.

For EAs with a FONSI determination, the staff concludes as part of its analysis that there will be no significant impacts from the action. Therefore, there would be no disproportionately high and adverse effects or impacts on members of the public, including minority or low-income populations. Generally, no environmental justice evaluation need be performed. However, there will be special cases where environmental justice reviews will be required for actions in which an EA/FONSI is prepared. These cases may include regulatory actions that have substantial public interest, decommissioning cases involving onsite disposal in accordance with 10 CFR 20.2002, decommissioning/decontamination cases which allow residual radioactivity in excess of release criteria, or cases where environmental justice issues have been previously raised. Management (division director/branch chief) will decide on a case-by-case basis when special circumstances exist that require the staff to perform an environmental justice review for an EA.

The level of discussion on environmental justice will vary based on the circumstances of each action. The actual determination of impacts will not change; the evaluation and analysis will be expanded. Environmental justice is a different manner of characterizing the impacts; it does not identify new impacts to analyze, although it does involve the collection of additional data. Each EIS or special case EA should contain a section that fully describes the environmental justice review process; the length of the section depends on the circumstances. Guidance is provided below.

Procedures

- (1) The first step in evaluating environmental justice potential is to obtain demographic data (census data) for the immediate site area and surrounding communities. Data for the state, county, and town will also be necessary. The demographic data should consist of income levels and minority breakdown. For the purpose of this procedure, minority is defined as individuals classified by the U.S. Bureau of the Census as Negro/Black/African American, Hispanic, Asian and Pacific Islander, American Indian, Eskimo, Aleut, and other non-White persons. Low-income is defined as being below the poverty level as defined by the U.S. Census Bureau.

Guidelines for determining the area for assessment are provided in the following discussion. If the facility is located within the city limits, a 0.56 mi radius (1 square mi) from the center of the site is probably sufficient for evaluation purposes; however, if the facility itself covers this much area, use a radius that would be equivalent to 0.5 mi from the site. If the facility is located outside the city limits or in a rural area, a 4 mi radius (50 square mi) should be used. [The U.S. Environmental Protection Agency (EPA) is currently using 1 square mi and 50 square mi for their environmental justice profiles; they use both for each site.] These are guidelines, the geographic scale should be commensurate with the potential impact area (i.e., if impacts are predicted out to 5 mi, a 5 mi radius should be used). The goal is to evaluate the "communities," neighborhoods, or areas that may be disproportionately impacted. The reviewer should consider an incremental radius (e.g., if a 4 mi radius is chosen, also obtain data for the 1, 2, and 3 mi radii). The specific census data may be difficult to obtain; one possible source is the Geographic Information System. Other sources include the applicant, local governments, state agencies, or local universities. It is recommended that the U.S. Bureau of the Census 10-yr census for data on minorities and income level be used. The U.S. Bureau of the Census 10-yr census data has poverty thresholds that should be used for determining the number of economically stressed households. Use the best available information.

The next step is to compare the area's percentage of minority population to the state and county percentage of minority population and to compare the area's percentage economically stressed households to the state percentage of economically stressed households. Note that the jurisdiction that the area percentage is compared to is dependent on the geographic area used in describing the demographics. It is possible that the geographic area could cross county and state lines and this should be considered when making comparisons. If the area percentage exceeds that of the state or county percentage (or the comparison base used) for either minority population or economically stressed households by 20 percent, the site does have an environmental justice potential and environmental justice will have to be considered in greater detail. Additionally, if either the minority or low-income population percentage exceeds 50 percent, environmental justice will have to be considered in greater detail. If neither criterion is met, the site does not have an environmental justice potential and no further evaluation is necessary. Document the conclusion in the environmental justice section.

- (2) Once it is determined that a site does have a potential for an environmental justice concern, it is then necessary to determine if there is a "disproportionately high and adverse" impact (human health or environmental effect) to the minority or low-income population surrounding the site. This does not involve determining if there are any new impacts; impacts of the proposed action are to be determined in the usual manner. The impacts should be evaluated to determine those that affect these populations. In considering the impacts to the populations, differential patterns

of consumption of natural resources should be considered (i.e., differences in rates and/or patterns of fish, vegetable, water and/or wildlife consumption among groups defined by demographic factors such as socioeconomic status, race, ethnicity, and/or cultural attributes.) The impacts to the local area surrounding the site should be summarized in the environmental justice section. It is not necessary to discuss the impacts at the same level of detail as in the impact sections. It is acceptable to briefly mention the impact and reference the section where it is discussed in greater detail.

The next step is to determine if the impacts disproportionately impact the minority or low-income population. Are the impacts greater for these populations? Are there any impacts experienced by these populations that are not experienced by others? In cases where the population is located next to the site, the impacts or potential for impact will likely be disproportionate for these populations. For instance, potential exposure to effluents may be greater for those living closest to the facility, or noise and traffic may disrupt nearby residents to a greater extent than those living far from the site, and the potential risk due to accidents may be greater for nearby residents. If there are no disproportionate impacts, environmental justice is not an issue, and no further analysis would be needed. Document the findings in the environmental justice section.

Next, it is necessary to determine if the impacts are high and adverse. Another way of stating this is: are the impacts significant, unacceptable or above generally accepted norms such as regulatory limits or state and local statutes and ordinances. Each impact should be reviewed for significance. If the statement can be made that none of the impacts is significant, then there are no disproportionate adverse and high impacts on the minority or low-income populations. Document the conclusion in the environmental justice section.

- (3) If there are significant impacts to the minority or low-income populations, it is then necessary to look at mitigative measures and benefits. Determine if there are any mitigative measures that could be taken to reduce the impact. Discuss the measures. Discuss the benefits of the project to surrounding communities. Benefits to a specific group may be difficult to determine; particularly economic benefits. The conclusion at this point is project specific. The conclusion may be that there are disproportionately high and adverse impacts to minority and low-income populations; however, the mitigative measures and/or the benefits of a project outweigh the disproportionate impacts. If this is not the case, the facts should be presented so that the ultimate decision maker can weigh all aspects in making the agency decision. The Executive Order does not prohibit taking an action where there are disproportionate high and adverse impacts to minority and low-income populations.
- (4) The results of an environmental justice evaluation should be documented in the EIS or special case EA. The document should contain a distinct section on environmental justice even if the demographics do not indicate a potential for an environmental justice concern. If a site has already received an environmental justice evaluation, it is acceptable to reference the previous evaluation and provide a summary of the findings and then add any new information that results from the proposed action. For instance, if environmental justice is included in a license renewal, it would not need to be completely readdressed for a license amendment.

Staff shall look at the demographics of a site early in the review process. This will enable the staff to identify affected populations and include the affected population in the process. If public meetings are

held concerning a specific site, an attempt should be made to include any minority or low-income community in the meetings. Extra measures should be taken to ensure that minority and low-income populations are given the opportunity to participate. These may include holding public meetings in the evenings or weekends or translating notices (and other documents) into a language other than English. If a representative(s) of the affected population has been identified, such as an officer of an organized local group or a community leader, the individual(s) should receive notices of meetings and copies of Federal Register notices. During scoping meetings for an EIS, NMSS staff shall solicit input on environmental justice issues.

**GUIDANCE
FOR
INCORPORATING ENVIRONMENTAL JUSTICE CONCERNS
IN
EPA'S NEPA COMPLIANCE ANALYSES**

April 1998

**U.S. Environmental Protection Agency
Office of Federal Activities
401 M Street S.W.
Washington, D.C. 20460**



1.0 PURPOSE

On February 11, 1994, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." This Executive Order is designed to focus the attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities. It requires federal agencies to adopt strategies to address environmental justice concerns within the context of agency operations. In an accompanying Presidential memorandum, the President emphasizes existing laws, including the National Environmental Policy Act (NEPA) should provide opportunities for federal agencies to address environmental hazards in minority communities and low-income communities. In April of 1995, the U.S. Environmental Protection Agency (EPA) released the document titled "Environmental Justice Strategy: Executive Order 12898." The document defines the approaches by which EPA will ensure that disproportionately high and adverse human health or environmental effects on minority communities and low-income communities are identified and addressed. It establishes Agency-wide goals for American Indian, Alaska Native, and other indigenous peoples (e.g., Native Hawaiian). It also establishes Agency-wide goals for environmental protection, and lists actions the EPA would take to incorporate environmental justice into its mission.

In August 1997, the EPA Office of Environmental Justice released the "Environmental Justice Implementation Plan." The Implementation Plan supplements the EPA environmental justice strategy. It provides estimated time frames for undertaking revisions, identifying the lead agents and determining the measures of success for each action item. Several EPA offices are developing more specific plans and guidance to implement Executive Order 12898 and this Agency-wide strategy.

This document serves as a guidance to incorporate environmental justice goals into EPA's preparation of environmental impact statements (EISs) and environmental assessments (EAs) under NEPA. The National Environmental Policy Act of 1969 (42 U.S.C. §4321 et seq.) serves as the Nation's basic environmental protection charter. A primary purpose of NEPA is to ensure that federal agencies consider the environmental consequences of their actions and decisions as they conduct their respective missions. For "major Federal actions significantly affecting the quality of the human environment," the federal agency must prepare a detailed environmental impact statement (EIS) that assesses the proposed action and all reasonable alternatives. EISs are required to be broad in scope, addressing the full range of potential effects of the proposed action on human health and the environment. Regulations established by both the Council on Environmental Quality (CEQ) and EPA require that socioeconomic impacts associated with significant physical environmental impacts be addressed in the EIS.

Environmental assessments have also become very important components of the NEPA process. Originally intended to serve as a mechanism for determining whether an agency's action was significant, thereby meriting an EIS, EAs are important analyses on their own. As a matter of policy, EAs completed by EPA regularly address socioeconomic effects associated with environmental impacts of Agency actions.

The purpose of this guidance is to assist EPA staff responsible for developing EPA NEPA compliance documentation, including EISs and EAs, in addressing a specific concern -- that of environmental justice.

Because analyzing and addressing environmental justice may assist in determining the distributional effects of environmental impacts on certain populations, it is entirely consistent with the NEPA process. This guidance is intended to:

- heighten awareness of EPA staff in addressing environmental justice issues within NEPA analyses and considering the full potential for disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;
- present basic procedures for identifying and describing junctures in the NEPA process where environmental justice issues may be encountered;
- present procedures for addressing disproportionately high and adverse effects to evaluate alternative actions, and;
- present methods for communicating with the affected population throughout the NEPA process.

As seen throughout this guidance document, environmental justice issues can be and should be analyzed and addressed using many of the same tools currently intrinsic to the NEPA process.

1.1 BACKGROUND

1.1.1 What is Environmental Justice?

Environmental Justice has been defined by a variety of organizations interested in the topic. EPA's Office of Environmental Justice offers the following definition:

"The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies."

The goal of this "fair treatment" is not to shift risks among populations, but to identify potential disproportionately high and adverse effects and identify alternatives that may mitigate these impacts.

1.1.2 Executive Order 12898

Executive Order 12898 and its accompanying memorandum have the primary purpose of ensuring that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of

its programs, policies, and activities on minority populations and low-income populations ..."¹ The Executive Order also explicitly called for the application of equal consideration for Native American programs. To meet these goals, the Order specified that each agency develop an agency-wide environmental justice strategy.

The Presidential Memorandum that accompanied the Executive Order calls for a variety of actions. Four specific actions were directed at NEPA-related activities, including:

1. Each federal agency must analyze environmental effects, including human health, economic, and social effects, of federal actions, including effects on minority communities and low-income communities, when such analysis is required by NEPA.
2. Mitigation measures outlined or analyzed in EAs, EISs, or Records of Decision (RODs), whenever feasible, should address significant and adverse environmental effects of proposed federal actions on minority communities and low-income communities.
3. Each federal agency must provide opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving accessibility of public meetings, official documents, and notices to affected communities.
4. In reviewing other agencies' proposed actions under Section 309 of the Clean Air Act, EPA must ensure that the agencies have fully analyzed environmental effects on minority communities and low-income communities, including human health, social, and economic effects.

As noted earlier, the purpose of this guidance is to assist EPA personnel in identifying and evaluating disproportionately high and adverse human health or environmental effects in minority communities and low-income communities within the context of NEPA documents prepared by EPA for actions which EPA complies with the procedural requirements of NEPA (*e.g.*, research and development activities, facilities construction, wastewater treatment construction grants, EPA-issued National Pollutant Discharge Elimination System (NPDES) permits for new sources, and programs under the EPA Voluntary NEPA Compliance Policy), including instances where EPA satisfies its NEPA compliance obligation as a cooperating agency. It is also meant to improve the affected communities' access to the NEPA process.

1.2 PRINCIPLES/PHILOSOPHY OF THIS GUIDANCE

This guidance highlights important ways in which EPA-prepared NEPA documentation may help to identify and address EJ concerns. The rationale and associated implications of the guidance will be described in the remainder of this document. This section provides a summary listing of the major implications.

¹ Throughout this guidance, the term "disproportionately high and adverse effects" is used interchangeably with the longer phrase "disproportionately high and adverse human health or environmental effects on minority populations and low-income populations." This is done purely for editorial ease.

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Environmental Protection
Agency

Administration and
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Office of Environmental Justice (OEJ)



Environmental Justice Strategy: Executive Order 12898



THE EPA'S ENVIRONMENTAL JUSTICE STRATEGY

April 3, 1995

Dear Reader:

Twenty-five years ago, our nation created -- virtually from scratch -- the most advanced system of environmental protection in the world. In that twenty-five years, our efforts to protect public health and the environment have made tremendous progress. We no longer have rivers catching on fire. Our skies are cleaner.

But much remains to be done. Forty percent of our rivers, lakes and streams are still too polluted for fishing and swimming. Many communities who still look to their rivers for fish to eat were unable to do so last year, when EPA issued some 1,000 fish advisories because the waters were too polluted. Two out of five Americans live in cities where the air does not meet public health standards. One in four Americans still lives within four miles of a toxic dump site.

On February 11, 1994, President Clinton issued Executive Order 12898 on environmental justice. This Order focuses Federal attention on the environmental and human health conditions of minority communities and low-income communities and calls on agencies to make achieving environmental justice part of their mission. President Clinton wanted Federal agencies to reinvent the way we approach environmental justice so that our day-to-day efforts will be more effective in protecting the public health and environment

President Clinton and I believe that all Americans deserve to be protected from pollution - not just those who can afford to live in the cleanest, safest communities. All Americans deserve clean air, pure water, land that is safe to live on, and food that is safe to eat. The Clinton Administration believes that protecting our environment means protecting our health -- the health of our families, our neighborhoods, our economy and our children.

We know that government cannot do the job alone. Our agencies want to work with all who can contribute to finding solutions -- communities, State, Tribal, and local governments, business, and environmental organizations. Together, we have developed strategies such as this one to help bring justice to Americans who are disproportionately affected by pollution: children exposed to lead paint in old buildings, farm workers exposed to high-risk pesticides, people who fish in polluted waters, and those who live near hazardous waste incinerators.

THE ENVIRONMENTAL PROTECTION AGENCY'S ENVIRONMENTAL JUSTICE STRATEGY

INTRODUCTION

EPA was established in 1970 in response to growing concerns about the problems and the difficulties in protecting public health and improving environmental conditions in our country. These concerns included unhealthy air, polluted rivers, unsafe drinking water, and waste disposal. EPA, and the Clinton Administration, believe that all Americans are important to the future of our nation and deserve to be protected from pollution, regardless of race, color, national origin, or economic circumstance. Early in her tenure, EPA Administrator Browner accepted the challenge to make environmental justice one of EPA's highest priorities. As part of the National Performance Review (NPR) efforts to reinvent government, the Administrator formed a team of EPA employees to focus on the Agency's mission, including environmental justice, and find solutions to problems that impede fulfillment of its mission.

On February 11, 1994, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," and an accompanying Presidential memorandum, to focus Federal attention on the environmental and human health conditions in minority communities and low-income communities. The Executive Order, as amended, directs Federal agencies to develop, by March 24, 1995 an Environmental Justice Strategy that identifies and addresses disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations.

DEVELOPMENT OF THE ENVIRONMENTAL JUSTICE STRATEGY

Our Goals:

- ◆ No segment of the population, regardless of race, color, national origin, or income, as a result of EPA's policies, programs, and activities, suffers disproportionately from adverse human health or environmental effects, and all people live in clean, healthy, and sustainable communities.
- ◆ Those who live with environmental decisions -- community residents, State, Tribal, and local governments, environmental groups, businesses -- must have every opportunity for public participation in the making of those decisions. An informed

Introduction

and involved community is a necessary and integral part of the process to protect the environment.

The Principles: The purpose of the Strategy is to ensure the integration of environmental justice into the Agency's programs, policies, and activities consistent with the Executive Order. As the Administrator said when the President issued the Executive Order:

"We will develop strategies to bring justice to Americans who are suffering disproportionately... We will develop strategies to ensure that low-income and minority communities have access to information about their environment--and that they have an opportunity to participate in shaping the government policies that affect their health and environment."

Our strategy and further efforts on environmental justice will be based on the following guiding principles:

- 1) Environmental justice begins and ends in our communities. EPA will work with communities through communication, partnership, research, and the public participation processes.
- 2) EPA will help affected communities have access to information which will enable them to meaningfully participate in activities.
- 3) EPA will take a leadership and coordination role with other Federal agencies as an advocate of environmental justice.

The Process: Since the NPR report and the issuance of the Executive Order, a number of steps were undertaken by the Agency:

- ◆ EPA established the Environmental Justice Steering Committee and Policy Workgroup to develop, help implement, and monitor EPA's environmental justice activities. The Steering Committee acts as a senior management "board of directors" to guide environmental justice at EPA. The Policy Workgroup, made up of senior-level staff, develops, implements, and reviews environmental justice policy. In addition, each Office and Region has established Environmental Justice Coordinators. These three groups are assisted by the Office of Environmental Justice.
- ◆ On April 11, 1994, EPA formed the National Environmental Justice Advisory Council (NEJAC), which is comprised of 23 representatives from academia, business and industry, State, Tribal, and local governments, environmental organizations, community groups, and non-governmental organizations. The NEJAC provides advice to the Agency on matters related to environmental justice.

Introduction

Communities and leaders of the environmental justice movement have taken leadership roles in this process.

- ◆ The EPA National Goals Project has held a series of public meetings around the country to identify major environmental priorities, including environmental justice issues. Environmental justice concerns are integrated into EPA's process of identifying national environmental goals.

The Steering Committee and Policy Workgroup have been developing an environmental justice strategy for the last year. The first step was the Environmental Justice Action Plan developed in response to the recommendations of the NPR. The Action Plan was incorporated into the Agency's draft outline of the Environmental Justice Strategy produced pursuant to the Executive Order. Expanding on the draft outline, Offices and Regions contributed substantially to this Strategy. The Strategy incorporates the Agency's work with the Federal Interagency Working Group on Environmental Justice, its task forces, and with other Federal agencies. It was produced with the hard work and expertise not only of those within the government, but, more importantly, with the support of a broad range of individuals outside the government who care about these issues.

The early documents leading up to the development of this final Strategy were developed with involvement of diverse people and groups working together. EPA recognizes that no process would be appropriate without up-front involvement of our communities and stakeholders. For example, the NEJAC and its four subcommittees have been actively involved in the strategy development process by reviewing and commenting on EPA's Environmental Justice Action Plan, EPA's draft outline, and draft strategy. At the January 1995 NEJAC meeting in Atlanta, NEJAC committees and subcommittees contributed substantial comments to the Draft Environmental Justice Strategy. EPA and other agencies held an interactive public forum to solicit comments on the draft Strategy from communities and stakeholders throughout the nation.

The strategy uses the term "minority" rather than "people of color" in order to be consistent with the Executive Order, but EPA is mindful and supportive of many communities' desire to use "people of color." The Strategy's uses of the term indigenous refers to all people within the boundaries and territories of the United States regardless of their affiliation with a federally-recognized Tribe. However, the Agency recognizes various terminology preferences among native people and will strive to respect and utilize appropriate language on a case-by-case basis in its interactions with native constituents.

This Strategy is a broad, framework intended to be a "Living Document" and an initial step in an ongoing effort to integrate environmental justice objectives into the Agency's activities.

ments, mental and/or physical incompetence, name changes, and all matters arising under the Navajo Nation Children's Code.

HISTORY

CAU-46-89, August 16, 1989.

Note. Provisions of former §252, adopted by CJA-5-59, January 9, 1959 and CO-69-58, October 16, 1958 relating to term of office of judges were recodified at 7 NNC §355(B), by CD-94-85, December 4, 1985.

CROSS REFERENCES

9 NNC §1001 *et seq.*

§ 253. Jurisdiction—Generally

The District Courts of the Navajo Nation shall have original jurisdiction over:

A. Crimes. All violations of laws of the Navajo Nation committed within its territorial jurisdiction.

B. Civil Causes of Action. All civil actions in which the defendant is a resident of Navajo Indian Country, or has caused an action to occur within the territorial jurisdiction of the Navajo Nation.

C. Miscellaneous. All other matters over which jurisdiction has been heretofore vested in the "Navajo Tribal Court of Indian Offenses", or which may hereafter be placed within the jurisdiction of the District Courts by the Navajo Nation Council.

HISTORY

CD-94-85, December 4, 1985.

CF-19-80, February 13, 1980.

CJA-5-59, January 9, 1959.

CO-69-58, October 16, 1958.

Note. Pursuant to §252 of this title, as adopted by CAU-46-89, August 16, 1989, previous subsection pertaining to "Decedents' Estates" has been deleted.

ANNOTATIONS

1. The Courts of the Navajo Nation are empowered to award alimony in dissolution of marriage cases. *Johnson v. Johnson*, 3 Nav. R. 5, (Nav. Ct. App. 1980).

Nothing in Navajo tradition or custom would prohibit the court from applying New Mexico law pursuant to 7 NNC §204 and therefore, an award of alimony in a marriage dissolution action in the tribal courts is both proper and authorized. *Id.*

This section does not exclude review of Navajo Tribal Council actions from its broad grant of power to the courts. *Halona v. MacDonald*, 1 Nav. R. 189, (Nav. Ct. App. 1978).

2. Paragraph (A) of this section enables the Courts of the Navajo Nation to issue summons or warrants applicable to a criminal prosecution. *Navajo Nation v. Atcity*, 4 Nav. R. 130 (Nav. Ct. App. 1983).

3. Navajo Nation has the power to grant its courts personal jurisdiction over foreign corporations as a consequence of such corporations' acts in Navajo territory, such as wrongful repossession alleged in instant case, according to modern

expansions of the "minimum contacts" due process standard. *Thompson v. Lovelady's Frontier Ford*, 1 Nav. R. 282, (Nav. Ct. App. 1978).

This section's provision for jurisdiction over all other matters over which jurisdiction has been or may be vested implicitly asserts Navajo Nation jurisdiction over non-Indian, non-resident businesses and individuals, and court has jurisdiction over a non-Indian, non-resident business which allegedly wrongfully repossesses personal property upon Navajo land. *Id.*

4. District Court has civil jurisdiction, under this section's provision for jurisdiction over "all other matters which may hereafter be placed within the jurisdiction of the Trial Court," to enjoin a threatened criminal trespass prohibited by the code. *Salt River Project Agricultural Improvement and Power District v. International Brotherhood of Electrical Workers Local Union No. 266*, 1 Nav. R. 277, (Nav. Ct. App. 1978).

5. A non-Indian may be sued in the Navajo courts if he is found within the tribe's territorial jurisdiction; so that defendant corporations could be sued for forcible entry and detainer. *Navajo Tribe v. Orlando Helicopter Airways, Inc.*, (Nav. Ct. App., January 12, 1972).

6. Navajo Courts of Indian Offenses exercise broad criminal and civil jurisdiction which covers suits by outsiders against Indian defendants, and no Federal Act has given state courts jurisdiction over such controversies. *Williams v. Lee*, 358 U.S. 217, 79 S.Ct. 269, 3 L.Ed. 2d 251 (1959).

Arizona courts are not free to exercise jurisdiction over a civil suit by a non-Indian against a Navajo Indian where court of action was derived from transaction which took place on the Navajo Reservation. *Id.*

§ 254. Territorial jurisdiction

The territorial jurisdiction of the Navajo Nation shall extend to Navajo Indian Country, defined as all land within the exterior boundaries of the Navajo Indian Reservation or of the Eastern Navajo Agency, all land within the limits of dependent Navajo Indian communities, all Navajo Indian allotments, and all other land held in trust for, owned in fee by, or leased by the United States to the Navajo Nation or any Band of Navajo Indians.

HISTORY

CD-94-85, December 4, 1985.

CJY-57-85, July 25, 1985.

CMY-28-70, May 7, 1970.

Preamble. CJY-57-85 contained the following in the preamble:

"7. It is the intent of these amendments that the reference to 'all land' is comprehensive and includes rights-of-way, fee land, and any other lands, notwithstanding the nature of title thereto, within the exterior boundaries of the Navajo Reservation, Eastern Navajo Agency, dependent Navajo communities, Navajo Indian allotments and all lands held in trust for, owned in fee by, or leased by the United States to the Navajo Nation or any Band of Navajo Indians. Nothing herein shall be construed as constituting authorization for the purchase or lease of lands by any Band of Navajo Indians; and

"8. 'Dependent Navajo Indian communities' is intended to encompass all lands currently within the Eastern Navajo Agency and such other lands as may be

"3. All program, funding an grants or financial assistance from the Navajo Nation and its Divisions shall continue without interruption for the remainder of Fiscal Year 1983."

"4. In the event that the voters do elect to establish a town council form of government, then the Chairperson of the Navajo Tribal Council is hereby directed to present to the Navajo Tribal Council a report and recommendation for the establishment of such town council form of government in the Shiprock-Nataani Nez communities."

"5. The Planning Committees for the Shiprock Chapter and the Nataani Nez Chapter are hereby directed to convene in joint session to plan and implement a town council form of government in the event that the voters so elect."

Counselor Chapter. CMY-36-74, May 1, 1974, certified a new chapter to be known as the Counselor Chapter.

Rough Rock Chapter. CF-18-68, certified a new chapter to be known as the Rough Rock Chapter.

Red Mesa Chapter. CAU-50-67, August 1, 1967, certified a new chapter to be known as the Red Mesa Chapter.

Low Mountain Chapter. CMY-35-67, May 9, 1967, certified a new chapter to be known as the Low Mountain Chapter.

Crownpoint Chapter. CJA-17-65, January 20, 1965, certified a new chapter to be know as the Crownpoint Chapter.

§ 4002. Authority to make local chapter ordinances

Certified chapters may enact local ordinances on any matter affecting the community. All such ordinances shall be submitted to the Transportation and Community Development Committee and to the Navajo Nation Council for approval. All chapter ordinances shall be in writing and filed with the Central Records Department of the Navajo Nation.

HISTORY

CAP-23-90, April 6, 1990.

CMY-23-79, May 3, 1979.

Note. "Transportation and Community Development Committee" substituted for "Advisory Committee". Also, "Central Records Office" was amended to read "Central Records Department of the Navajo Nation."

CROSS REFERENCES

See 2 NNC §420 *et seq.*

§ 4003. [Repealed]

HISTORY

CMY-23-79, May 3, 1979.

§ 4004. [Superseded]

HISTORY

CAP-23-90, May 22, 1990. As amended generally.

CMY-23-79, May 3, 1979.

Note. This section formerly related to titles and terms of chapter officers.

§ 4005. [Superseded]

HISTORY

Navajo Nation Election Code, CAP-23-90. See 11 NNC Part I, §241 *et seq.*

§ 4006. [Superseded]

HISTORY

Navajo Nation Election Code, CAP-23-90. See 11 NNC Part I, §161 *et seq.*

§ 4007. [Superseded]

HISTORY

ACS-115-80, September 11, 1980.

Note. This section, governing powers and duties of chapter officers, was derived from CMY-23-79. See now §4023 *et seq.* of this title.

§ 4008. [Superseded]

HISTORY

ACS-115-80, September 11, 1980.

Note. This section, governing compensation of chapter officers was derived from CMY-23-79. See now §4025 of this title.

§ 4009. Chapter meetings

A. A quorum of 25 or more registered voters must be present for a chapter meeting to be official.

B. Official actions of the chapter shall be taken in open session and all meetings of the chapter are open to the Navajo residents of the community. Chapter officials may go into closed or executive session to conduct personnel discussions.

HISTORY

CMY-23-79, May 3, 1979.

Subchapter 3. Navajo Nation Chapters and Chapter Officials

§ 4021. Purpose

A. The Chapters of the Navajo Nation represent the foundation of the Navajo Nation government. They are designed to provide a forum in which local needs may be addressed and in which concerns of the Navajo Nation as a whole may be explored and considered by each constituent part of the Navajo Nation.

B. In order to carry out the functions of Chapter Government, Chapter Officials are elected from each community to lead the community in its effort to meet the needs of the Navajo Nation as a whole.

Chapters must interact with other parts of the Navajo Nation and federal and local agencies which serve and affect the Navajo Nation.

C. Through meaningful participation in comprehensive community planning by chapters and their members, effective community planning and successful implementation of community projects necessary to organize community growth and improvement will become a reality.

HISTORY

ACS-115-80, September 11, 1980.

§ 4022. [Superseded]

HISTORY

This section entitled "Authorization" enacted pursuant to ACS-115-80, September 11, 1980, referenced CMY-23-79, CJA-20-74, ACMY-144-75, and ACAP-61-60, all of which have been superseded; the Election Code at 11 NNC addresses elections; the federal revenue sharing programs has been discontinued, and "chapters" and related matters are found at 2 NNC §4001 *et seq.*

§ 4023. Duties and responsibilities of the Chapter Officers

A. The Chapter President:

1. Consults with the Chapter Vice-President, Secretary/Treasurer, Council Delegate(s), Grazing Committee and/or Land Board Members in preparation of the agenda for each Chapter meeting.

2. Presides at all meetings of the Chapter, maintains order at Chapter meetings.

3. Provides all residents of the community with an equal opportunity to speak on issues before the Chapter.

4. Recommends the establishment of and appointment to the standing and special committees of the Chapter to the membership for approval.

5. Has authority to suspend or adjourn a Chapter meeting in the event of:

a. Lack of quorum (twenty-four or less adult members);

b. Disorder at the meeting;

c. Unforeseen emergency; and

d. When a Chapter meeting is adjourned or suspended, the Chapter President shall provide notice to the Chapter members as to the time and place of the next (or continued) Chapter meeting.

6. Vote in case of a tie.

7. Shall have the authority to call an emergency or special Chapter meeting.

8. Is responsible for management of operations and financial administration:

§ 4028. Chapter authority

A. The people of each certified Chapter, in duly called meetings, shall have the authority to review all matters including the community land use planning affecting the community and make appropriate recommendations to the Navajo Nation, or such federal, state and local agencies as may have the responsibility for considering and approving such action.

B. Chapters shall have the authority as set forth in CMY-23-79, Section "B", 2 NNC §4002 to consider and enact ordinances on matters of local concern, subject to the approval of such ordinances by the Transportation and Community Development Committee of the Navajo Nation Council.

C. Chapters are authorized to appropriate funds made available for Chapter purposes for any project of general benefit to the community, subject to specific limitations established by the organization or government which provided the funds to the Chapter.

D. Subject to the requirement of Navajo Nation law, including this Plan of Operation, Chapters may decide for themselves, how, when and where the business of the Chapter is to be conducted.

E. All resolutions approved by the Chapter shall be set forth in writing and certified by the Chapter officials.

F. Chapters have an obligation to make available land in the community for projects of benefit to the community or to the Navajo Nation as a whole.

HISTORY

ACS-115-80, September 11, 1980.

Note. Reference to "Advisory Committee" has been deleted and substituted therefore is "Transportation and Community Development Committee" pursuant CD-68-89, December 15, 1989, and 2 NNC §463(C)(3).

§ 4029. Code of ethics

Chapter officers shall maintain a high standard of conduct in all Chapter dealings. This standard of conduct shall include, but not be limited to, conducting all Chapter dealings in a truthful and honest manner, conducting all Chapter business openly, discharging all of their Chapter duties with no taint of impropriety, and serving their Chapter to the very best of their ability.

HISTORY

ACS-115-80, September 11, 1980.

RESULTS OF ENDAUM LAND-USE SURVEY

Dates survey was conducted: Jan. 30, 31, Feb. 6, 1999

Total number of respondents: 45

Question or Response Category	Results of Responses
Number of homes with telephones	2 (4%)
Number of respondents who have work phone numbers	10 (22%)
Number of respondents who have cellular phones	9 (20%)
Number of respondents who do not have a phone in their home, but have access to a phone "near" their home	8 (18%)
"How long have you lived at this location?" (Note: Responses such as "all my life", "lifelong," "lifetime" were interpreted as being synonymous.)	"All my life" — 33 <20 yrs — 4 20-39 yrs — 7 40-59 yrs — 13 ≥60 yrs — 12
"How long has this land been in your family?" (Note: Responses of "life" or "lifetime" were interpreted as 1 generation.)	1 generation — 7 2 generations — 6 3 generations — 15 4 generations — 3 many generations — 14
Number of persons in respondent's family (Note: Several respondents counted grandparents and grandchildren.) (Statistics: n=42; \bar{x} = 5.05; σ = 3.23; range, 1-40; 2 "no responses" and 1 response of 40 excluded from calculations.)	1 — 5 2 — 4 3 — 5 4 — 4 5 — 10 ≥6 — 15 no response — 2
Number of respondents who reported using their land for grazing	41 (91%)
Respondents' reporting of acres used for grazing (Note: No responses or responses such as "a large area" were categorized as "unquantified." Responses such as "1 square mile" or "3 sections" were categorized as ≥500 acres. Total reported acreage was 12,088 acres.)	unquantified — 5 < 10 acres — 5 10-99 acres — 6 100-249 acres — 3 250-499 acres — 2 ≥ 500 acres — 8
Total number of livestock reported by respondents Sheep: n=27; range, 3-180; \bar{x} =30.4; σ =35.8; Σ =812; Goats: n=8; range, 2-65; \bar{x} =18.1; σ =22; Σ =145; Cattle: n=21; range, 2-75; \bar{x} =19.8; σ =15.9; Σ =417; Horses: n=22; range, 1-10; \bar{x} =4; σ =2.9; Σ =87	sheep — 812 goats — 145 cattle — 417 horses — 87 Tot. Livestock = 1,461
Number of respondents who report growing crops on their lands	28 (62%)
Number of respondents with running water in their homes	23 (51%)

Number of respondents who reported they haul water	40 (89%)
Most frequently reported places from which water is hauled (Note: Range of reported one-way hauling distances: 0.5 mi. - 47 mi.)	Gallup — 21 Red Rock St. Park — 12 Rehoboth — 10 Church Rock — 8 Local Windmill — 5 Crownpoint — 2 Twin Lakes — 2 Mariano Lake — 1 Rain water/pond — 1
Average reported frequency of water hauling (days per week) •Statistics: n=38; range 0.5 days/wk-7.0 days/wk	2.4 days/week
Average volume of water (in gallons) hauled per trip •Statistics: n=38; range, 2 gallons-1,000 gals	164.5 gallons/trip
Principal uses of hauled water; n=40 respondents •"Domestic" use includes cooking, bathing, cleaning, etc. •"Drinking" use means for human consumption •"Livestock" use means watering sheep, goats, cattle, horses, etc. •"Irrigation" use means watering gardens, cropland	Drinking — 31 (78%) Livestock — 29 (73%) Domestic — 28 (70%) Irrigation — 11 (28%)



DOCKETED
USNRC

'98 JAN -2 A10:12

NAVAJO TRIBAL UTILITY AUTHORITY
AN ENTERPRISE OF THE NAVAJO NATION

OFFICE OF
RULEMAKING AND
ADJUDICATIONS STAFF

December 23, 1997

SERVED JAN - 5 1998

Office of the Secretary
Attn: Rulemaking and Adjudications Staff
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Docket No. 40-8968-ML

Dear Sir or Madam:

This is to advise the Nuclear Regulatory Commission that the Navajo Tribal Utility Authority Management Board has enacted Resolution NTUA-11-97 (copy enclosed), opposing the proposed in situ leach mining of uranium by Hydro Resources, Inc., at Crownpoint, New Mexico.

Sincerely yours,

Malcolm P. Dalton
General Manager

MPD/lmb
Enclosure

RESOLUTION OF THE
MANAGEMENT BOARD OF THE
NAVAJO TRIBAL UTILITY AUTHORITY

NTUA-11-97

Stating the Position of Navajo Tribal Utility Authority on
Proposed Uranium Solution Mining in Eastern
Navajo Agency by Hydro-Resources, Inc.

WHEREAS:

1. The Management Board of the Navajo Tribal Utility Authority ("NTUA") is delegated authority and responsibility for the management and operation of the Authority, 21 N.T.C. §7(a)(1); and
2. The mission of NTUA pursuant to its Plan of Operation is to provide electric, gas and water utility services to the Navajo Indian reservation where such service is economically feasible; and
3. NTUA has two operating wells in the vicinity of Crownpoint, New Mexico, which provide water to a consumer population of approximately 10,000 in Crownpoint, New Mexico, and surrounding Navajo communities; and
4. Hydro-Resources, Inc., a New Mexico subsidiary of Uranium Resources, Inc., a Texas corporation, has filed for a license with the Nuclear Regulatory Commission to mine uranium at Crownpoint and Churchrock, New Mexico, using an in situ process; and
5. Previously, NTUA has provided comment in response to an Environmental Impact Statement on the proposed solution mines and stated a concern that its wells and parts of its distribution system will have to be replaced if HRI is granted a license to proceed with mining; and
6. The Nuclear Regulatory Commission is proposing in the Final Environmental Impact Statement to require HRI to plug and abandon NTUA's Crownpoint wells and to drill and equip new wells to be located farther from the mining areas, and to replace NTUA's affected water distribution system; and

7. The Nuclear Regulatory Commission's proposal does not address future operation and maintenance expenses that NTUA may incur due to calcification of its water distribution system, nor does it address future water quality and quantity concerns in connection with the relocated water supply wells and restoration of groundwater after mining; and

8. The Management Board of NTUA deems the response of the Nuclear Regulatory Commission to be inadequate and not responsive to the needs of NTUA with respect to its water system and the community of Crownpoint to maintain its existing high quality water supply and to allow growth in its use; and

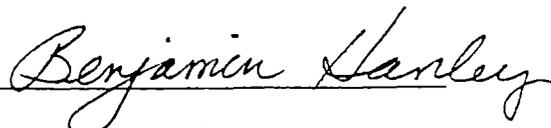
9. It is in the best interest of NTUA and its customers that the Management Board state a position on the Nuclear Regulatory Commission's requirement that HRI plug and abandon NTUA's Crownpoint wells and replace its water supply wells and parts of its distribution system affected by solution mining.

NOW THEREFORE BE IT RESOLVED THAT:

1. The Management Board of the Navajo Tribal Utility Authority states its opposition to the proposed in situ leach mining by Hydro-Resources, Inc., in Eastern Navajo Agency at Crownpoint.
2. The Management Board directs NTUA management to inform HRI and the Nuclear Regulatory Commission that it will not agree to plug and abandon its Crownpoint wells.

C E R T I F I C A T I O N

I hereby certify that the foregoing Resolution was duly considered by the Management Board of the Navajo Tribal Utility Authority at a duly called meeting at Tucson, Arizona, at which a quorum was present, and that same was passed by a vote of 7 in favor and 0 opposed, this 11th day of December, 1997.



Benjamin Hanley
Assistant Secretary, NTUA

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of
HYDRO RESOURCES, INC.

Docket No.(s) 40-8968-ML

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing NTUA RESOLUTION ENACTED 12/11 have been served upon the following persons by U.S. mail, first class, except as otherwise noted and in accordance with the requirements of 10 CFR Sec. 2.712.

Office of Commission Appellate
Adjudication
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Administrative Judge
B. Paul Cotter, Jr.
Presiding Officer
Atomic Safety and Licensing Board Panel
Mail Stop - T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Administrative Judge
Thomas D. Murphy
Special Assistant
Atomic Safety and Licensing Board Panel
Mail Stop - T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555

John T. Hull, Esq.
Mitzi A. Young, Esq.
Office of the General Counsel
Mail Stop - 0-15 B18
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Diane Curran, Esq.
Harmon, Curran & Spielberg
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Washington, DC 20009

Susan G. Jordan, Esq.
Douglas Meiklejohn, Esq.
New Mexico Environmental Law Center
1405 Luisa Street, Suite 5
Santa Fe, NM 87505

Jep Hill, Esq.
Attorney for Hydro Resources, Inc.
Jep Hill & Associates
P.O. Box 2254
Austin, TX 78768

Mervyn Tilden
Mary Lou Jones
Zuni Mountain Coalition
P.O. Box 39
San Rafael, NM 87051

Docket No.(s)40-8968-ML
NTUA RESOLUTION ENACTED 12/11

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Executive Director
Water Information Network
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Albuquerque, NM 87106

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Dine' CARE
Navajo Nation
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Durango, CO 81301

Wm. Paul Robinson
Chris Shuey
Southwest Research and Information
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Albuquerque, NM 87106

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2300 N Street, NW
Washington, DC 20037

Bernadine Martin
P.O. Box #370
Crownpoint, NM 87313

Mervyn Tilden
P.O. Box 457
Church Rock, NM 87311

Grace Sam
Marilyn Sam
P.O. Box 714
Thoreau, NM 87323

Dated at Rockville, Md. this
5 day of January 1998

Adria T. Byrdson
Office of the Secretary of the Commission

Residential Character and Land Status in Vicinity of HRI Church Rock ISL Site

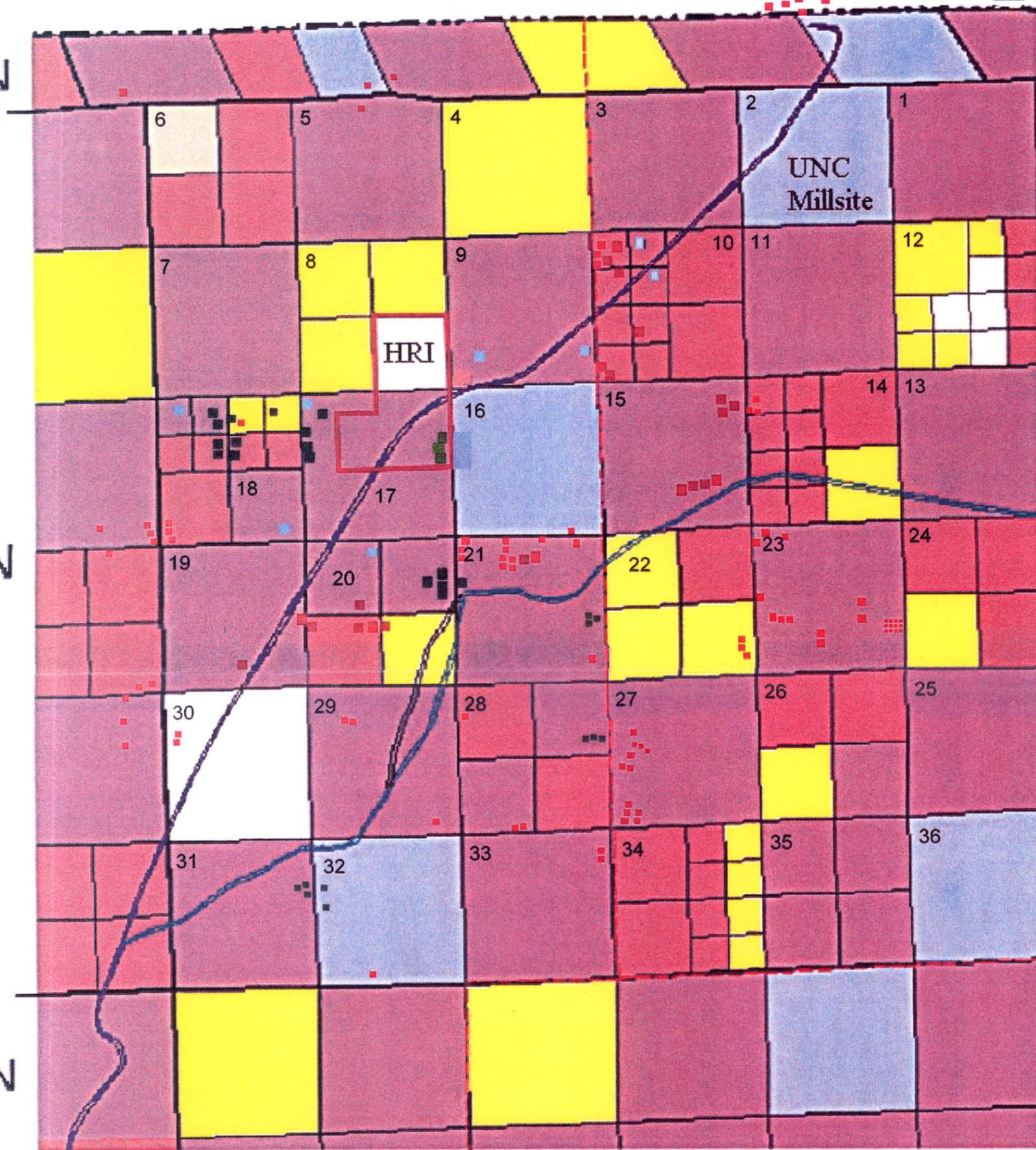
Navajo Indian Reservation

R16W R15W

T17N

T16N

T15N



LAND SURFACE CLASSIFICATION

- = NAVAJO TRIBAL TRUST LAND
- = NAVAJO TRIBAL FEE LAND
- = INDIAN ALLOTMENT LAND
- = PRIVATE LAND
- = BLM LAND
- = STATE LAND

POLITICAL BOUNDARIES

- = Chapter Boundary

ROAD CLASSIFICATION

- = STATE HIGHWAYS (Paved)
- = BIA Roads
- = County Road

Home Locations Approximate

- NUREG-1508 Residences from Figure 4.5
- Residences Surveyed by ENDAUM
- Selected Residences



SCALE 1:63860



MILES

January 21, 1989
 NAVAJO EAST DEPARTMENT
 Navajo Nation
 1700 Highway 100
 Window Rock, AZ 86501

United States
Environmental Protection
Agency

Office of Emergency and
Remedial Response
Washington, DC 20460

OSWER 9378.0-12
EPA/540-R-98-002
PB98-963203
May 1998



EPA

Meeting Summaries from the EPA/ICMA Relocation Stakeholder Forums

Superfund Relocation Discussion with Native Peoples and Tribal Representatives
October 21-22, 1997
Seattle, Washington

Introduction and Welcomes

Terry Williams opened the meeting with a prayer and welcomed participants. Chris Fields, Section Chief of Region 10's Superfund Removal program, also welcomed participants and stated that he looked forward to a relocation policy that takes into account the perspectives of all stakeholders.

Barbara Yuhas of the International City/County Management Association (ICMA) announced that ICMA is working with the Environmental Protection Agency's (EPA's) Office of Emergency and Remedial Response (OERR) Community Involvement and Outreach Center in coordinating a series of discussions with a broad range of stakeholder groups (industry, state and local officials, public health organizations, environmental groups, tribal representatives, and environmental justice organizations) on the issue of Superfund relocations. ICMA is a professional and educational association of appointed chief administrators and assistant administrators serving cities, counties, regional councils, and other forms of local government.

Suzanne Wells, Director of the Community Involvement and Outreach Center for Superfund, thanked the individuals who participated on the planning committee for this meeting. She also commented that the briefing on tribal issues that was held in August was very informative and served to provide a foundation for more effective dialogue at this forum. She then outlined the history of the Superfund Relocation issue. In 1995, a subcommittee of the National Environmental Justice Advisory Committee (NEJAC) requested that EPA look into developing a national policy for relocating residents affected by Superfund sites. Elliott Laws, then Assistant Administrator for OSWER, followed up by issuing a memorandum in May of 1995 announcing the Agency's intention to develop such a policy. A Relocation Roundtable was held in May 1996 to provide an opportunity for citizen and community input regarding relocation issues and concerns. The current series of forums on relocation provides additional opportunities for stakeholders to offer information and raise issues for consideration in EPA's development of the relocation policy and corresponding guidance.

The participants then introduced themselves and stated their expectations for the meeting. These expectations included providing positive input, listening, learning, offering different perspectives, and understanding the impact of contamination on spirituality and a general way of life.

Overview of Pre-meeting Briefing on Tribal Issues

Robert Holden and Gilbert Sanchez presented the highlights of the briefing on tribal issues that was held in Washington, D.C. in August, 1997. Mr. Holden reported that several tribal representatives spoke to a group of EPA and other government employees at the briefing. He stated that the participants discussed the relationship of cultures with intense and heartfelt dialogue. One important topic covered was the relationship of the Federal government to the tribes and the traditional tribal governments. Through treaties with the U.S. government, many tribes were forced to leave their homelands and sacred sites for reservations. Many of the agreements contained in such treaties were never met by the U.S., which is still a great concern to native peoples. Today, some tribes operate through dual governments of both traditional and non-traditional systems, leading to troubles over who is representing whom and what they represent.

Mr. Holden added that he believes the U.S. and tribal governments are working toward the same goals of self-sufficiency and independence for the tribes and the clean up of contamination on tribal land.

Mr. Sanchez provided further insight into the discussion. He noted that tribal representatives emphasized the historical perspective of the native people, including treaties and movements around the country. In addition, representatives introduced a holistic viewpoint of the problem of relocation and its meaning to native peoples. Participants also discussed various types of rights to land and natural resources. He concluded by saying that the briefing led to a better understanding of important issues such as the involvement of EPA and other Federal agencies, developing positive sincere interaction, the roles and responsibilities of governments and tribes, and ensuring that further pollution is not concentrated on minority groups with less power.

Sharing Experiences with Superfund Clean-up and Relocation

Dave Harrison reviewed maps illustrating native populations and pollution in Alaska. Mr. Harrison explained that the state receives very few resources. He indicated that there have not been many Superfund relocations in his region. He explained that he does not consider the United States or Alaskan governments as "his governments."

Mr. Harrison then asked for input from participants in the August 28th "Native American Cultural Awareness Meeting." He hoped to get a sense of what participants learned about the Native American culture from this meeting. Ms. Wells indicated that she gained a deeper understanding of tribal rules and the relationships between governing bodies. Larson King explained the importance, especially for the U.S. EPA, of knowing about tribes. He suggested that the EPA and tribal groups work together to educate each other.

Mary Skelton Roberts learned that there is a difference between what the word "relocation" signifies to EPA and to tribal groups. Mr. Williams agreed that the term is "loaded" for native peoples. He continued to point to how many sites are on reservations. He argued that the United States government has allowed this to happen. Mr. King explained that "natural resources" affect Native Americans lives in a different way than non-Native Americans. He explained that natural resources are "what we are and what we do." Mr. Harrison described the pollution affecting Alaska's people and environment. George Edwardson explained that Alaska is affected by various toxics including PCBs. He indicated that the United States government often ignores environmental protection legislation when natural resource development is the goal.

Levon Benally spoke about the Navajo's experience with Superfund relocation. He indicated that the process of getting sites listed on the NPL is very difficult and time-consuming. Therefore, the Navajo people are using their own money to clean up the United Nuclear site. The funds are inadequate, however, to clean up the isolated mine sight which impacts the soil, air, and water in the surrounding region. Mr. Benally explained that the United Nuclear Corporation Site, located on private lands, has tribal lands on its perimeter. Another site with tribal land is located about a half mile from United Nuclear, but is not on the NPL list. Mr. Benally has recently learned that the United Nuclear Corporation is filing for bankruptcy. In addition, he indicated frustration that the Navajo people live in this contaminated area, but the decision-makers do not.

Ted Garcia reviewed his complaints about the Superfund process. He stated that the Hazard Ranking System is biased against rural areas and does not take into account the way of life of his people.

He explained that EPA and tribes have different priorities when dealing with potential hazardous waste sites. He also mentioned his concern about jurisdiction, especially in "checkerboard areas." He indicated that Indian tribes have been an afterthought when finally approached for input.

Mr. Edwardson stated that the meeting participants were "color-coding" the issues. He indicated that the focus should be on a common goal. Teresa Juarez explained that EPA's guidelines for Superfund need to be revisited because they do not take into consideration all the factors and issues like "rural" versus "urban." She stated that it is important to remember that the Agency is dealing with people whose substance and life come from the land. Don Williams explained that there are certain restrictions within Superfund of what can and cannot be done (i.e., the corporation must be approached first).

Ms. Wells explained that Mr. Garcia and Felicia Wright are looking at the Hazard Ranking System (HRS) to see if it can be made more tribe-friendly. Felicia described EPA's larger effort to look at expanding tribal and state roles when it comes to the HRS. Specifically, the mathematical model is used to determine the relative ranking of contaminated sites for listing on the National Priorities List based on standard exposure assumptions. The HRS may have a natural bias against sites on tribal land because it does not consider the unique characteristics of tribal culture that affect tribal exposure to contaminant or tribal priorities. In addition, sites on tribal lands are competing for listing with the worst types of industrial sites nationally. Ms. Wright stressed the need to consider more subjective factors (i.e., spiritual, cultural) when generating HRS scoring factors. She indicated that there are more meetings with tribal representatives planned to examine and make recommendations for the HRS scoring process, and that EPA management is supportive of this issue.

Mr. Sanchez indicated that the negative impacts of pollution and contamination do not just affect one region or one group of people; they impact everyone. This message was a common theme of the day as meeting participants stressed that "what impacts me will impact you eventually." Ms. Wells agreed with Mr. Sanchez, but maintained that practical solutions must be developed.

Tuesday, November 21

Introduction and Welcomes

Gilbert Sanchez began the second day of the meeting with an opening prayer, followed by a welcome by Ms. Yuhas. Ms. Wells then summarized the key points from the first day: 1) the environment does not know any boundaries (contamination travels); 2) the health and well-being of native and tribal peoples is directly tied to the land; and 3) the tribes and EPA are working toward the same goals of restoring the environmental integrity of the land. She reviewed the objectives of the meeting: 1) to share the experiences of native and tribal people who have dealt with either temporary or permanent Superfund-related relocation; 2) to gain insight and hear the different perspectives that exist regarding temporary and permanent relocation of native and tribal people located near or on Superfund sites; and 3) to develop an understanding of how to take native and tribal cultural issue into consideration in EPA Superfund relocation decisions.

Ms. Wells presented some background information on Superfund relocations. The use of permanent relocations at Superfund sites has been limited, with only 16 cases in the history of the program. She noted that the goal of the Superfund program is to clean up sites, therefore permanent relocations are often not the preferred option. Relocations are conducted within the following context: 1) to protect human health and the environment; and 2) to make the land available for productive use. Generally, permanent relocations have been authorized in the past for two reasons: engineering and/or human health. She emphasized that the Agency takes the decision to relocate residents seriously, understanding that the decisions involved and the moving process are very stressful events for residents. In addition, the Superfund law contains specific provisions related to response actions associated with tribes. Section 126 of the law states that the affected tribal government must concur with any decision to permanently relocate tribal members away from a contaminated site and that any lands acquired for relocation will be retained in trust for the benefit of the tribe.

She explained that the schedule for the development of this policy includes distributing summaries of all of the forums to participants, completing a draft policy, and then bringing a group of stakeholder representatives together for review and comment on the draft.

Mr. Harrison commented that information on contaminated sites has been difficult to obtain in Alaska due to the association of many of these sites with the Defense Department (DoD). Several other tribal members concurred and stressed the importance of interaction among tribes in the creation of this policy and a tribal policy currently being developed by DoD. Ms. Wright responded that a bibliography entitled *Publications on Mining Waste Management in Indian Country* is available through the RCRA docket (phone (703) 603-9230). Other EPA resources for technical assistance to tribes for sharing information are also available. Steve Etsitty of EPA's Office of Solid Waste is the contact for this program and can be reached at (703) 305-3194.

Agenda and Ground Rules - Mary Skelton Roberts, Program for Community Problem Solving

Mary Skelton Roberts, the discussion facilitator, reviewed the agenda and ground rules for discussion.

Case Study Presentations

Impacts of Superfund Sites on the Navajo Nation - Levon Benally

See attached presentation.

Questions and Comments to Mr. Benally:

- Mr. Benally clarified that the land exchange between the Navajo Nation and the responsible parties served to release the Navajos from liability for the contaminated land.
- Ms. Singer asked for further information on the "home site release form." Mr. Benally responded that the tribe has issued home sites to its members for 99 years. However, once the contamination was identified, sites were not longer issued in these areas.
- Mr. Garcia inquired about the financial roles of the two EPA Regions involved (Regions 9 and 6). Mr. Benally responded that an agreement was reached with EPA for the tribe to deal with one lead region, Region 9, to simplify administrative matters. Region 6 does provide funds for the Nation to participate in site clean-up in Region 6.
- Mr. King asked what impact the condemnation and relocation had on the families. Mr. Benally responded that it is essential for the Navajo people to remain with the four mountains on the Navajo land; therefore new homes for the affected residents had to be within this boundary.
- Mr. Edwardson asked whether the federal government returns the land of the contaminated site to the tribe. Mr. Benally responded that once the site is cleaned up, the tribe does receive the land in some cases.
- Ms. Bulka inquired as to differences in the situations of Anglo and Navajo families in the area. Mr. Benally answered that the Anglo family was stabilized and added that there were differences among the Navajo families, depending on the chapter (districts or discrete areas consisting of tribal members) in which they lived.
- Mr. Harrison commented that Native peoples see relocation as "disappearing." It is necessary for these people to stay within the boundaries of the four mountains in order to protect their country.
- Ms. Wells asked how the Navajo Superfund office and EPA have worked together in making decisions. Mr. Benally responded that the office has begun to play a greater role in working with Region 6 and reviews any documents related to Navajo land.
- Mr. Garcia requested clarification on whether tribes are liable under CERCLA. Ms. Kraus answered that it is her understanding that tribes are not considered persons under the law and are therefore not liable as an owner/operator, but she will investigate the issue further. Mr. Benally added that 60% of the mines in the Navajo Nation are operated by Navajo miners.

Johanna Matanich - Navajo Nation Relocation

Johanna Matanich of DNA Legal services discussed the situation of the six relocated families represented by her organization. These families lived near the Prewitt refinery site on the Navajo Reservation and were subjected to soil and air contamination from lead, benzene, and hydrocarbons. The effects were enhanced through consumption of livestock raised in the area. However, no health effects have been directly linked to the contamination at the site.

Mr. Sanchez asked whether ongoing health studies were included in the relocation negotiations, as some effects do not appear for many years. Ms. Matanich clarified that blood testing was done as a part of the initial risk assessment, which found that no significant risk existed. EPA conducted this assessment as

part of an agreement to receive funds from the responsible party. Mr. Benally added that the reason for the families' relocation was partly for health considerations, but primarily because of the land-exchange agreement between the company and the Navajo Nation.

Mr. Benally also noted that one Anglo family still lives near the site. The responsible party installed a water treatment system in this family's house, and they did not want to move. However, the Navajo families were not comfortable with these water treatment systems and wished to be relocated. According to Ms. Matanich, the older family members had originally move to the site to work at the Prewitt refinery; therefore, they fell less of a unique connection to this land and were glad to have the opportunity to move back to the area where their family had traditionally lived. Ms. Juarez asked how the younger children who were born on the site felt about the land. Ms. Matanich responded that she did not know their views.

Ms. Matanich then reviewed the time-line of the relocation. In 1990, a land exchange agreement between the responsible parties and the Navajo nation was established and the residents were informed they would have to move. The offer from the company for funding of the relocation was approved by the Navajo Nation in 1992. In 1996 and 1997, the families were relocated to double-wide mobile homes 20-40 miles away from their original homes. She commented that the funding offered by the responsible parties was not adequate to cover the costs of relocation, particularly in rural areas where many public services must be installed for the new homes. She also emphasized that stress experienced by the residents due to the relocation exacerbated the existing stress of exposure to contamination.

She offered several suggestions for improving the relocation process, including: 1) relocate residents more quickly; 2) establish more specific deadlines for relocation activities; and 3) develop comprehensive plans for using funds. Mr. Sanchez added that relocation plans must consider the costs of building infrastructure in rural areas with minimal existing public services. She concluded by noting that the relocated families are now settling into their new homes, however problems still exist with the remaining residents feeling left out and people harboring resentment towards the relocated residents in their new communities.

Ms. Juarez commented that the Agency does not ensure that all the necessary participants are involved in discussions dealing with environmental problems and that there is never enough money to fund travel for these individuals. Mr. Harrison added that EPA has not provided all the information and documents regarding relocation to tribal and native people. In response, Rick Urbom explained that the major law for relocation is the Uniform Relocation Assistance and Real Property Acquisition Act (URA). He stated that the URA came into law in 1971 and was amended in 1987. The U.S. Department of Transportation is the lead agency for implementing the provisions of the URA. In addition, each state has its own relocation laws. Since the implementation of the URA, thousands of permanent relocations have been successfully completed, providing a good basis of experience for relocation decisions.

Mr. Sanchez commented that tribes should seek out funding to meet with other agencies that affect tribes through relocation. He also noted that Federal agencies should consult more with tribes and concentrate their work on tribal organizations that truly represent the interest of tribal members.

Technical Assistance Grants

In response to requests from participants, EPA staff provided more detailed discussion on technical assistance grants available to communities. Ms. Wells distributed a pamphlet, "Superfund

Today," which includes information about technical assistance grants. She indicated that EPA staff believe that it is important to provide money for technical assistance to communities near NPL sites. Every regional office has a technical assistance grant coordinator. The grants, usually fifty-thousand dollars per site over the life of the project, should fund the hiring of an independent expert who provides technical advice to the community. Two-hundred grants have been awarded in the history of Superfund, with ten of those being for more than fifty-thousand dollars at large, complex sites. She indicated that Haskell University has recently been awarded seventy-five thousand dollars to be part of the Hazardous Substance Research Consortium, a network of universities worldwide.

The meeting participants discussed the issue of "incorporated." Some participants, including Mr. Harrison and Estelle Bulka of EPA, indicated that they disapproved of the requirement of incorporation to be considered for the technical assistance grant. Ms. Wells explained that the requirement exists to facilitate the grant distribution process. She explained that EPA uses the following criteria when awarding grants: 1) history of commitment and work in the community; 2) commitment to informing the public; and 3) infrastructure in place to help manage the grant. A second type of grant, Technical Outreach Support Centers (TOSCs) offer training or the review of technical documents for sites not listed on the NPL or sites on the NPL that will not be grant applicants. Further, Ms. Wells pointed out that grant applications are reviewed at the regional level; they do not receive congressional review, a concern of some meeting participants.

Video, Superfund Relocation Roundtable, Pensacola, Florida

The meeting participants watched a video of portions of the May 1996 Superfund Relocation Roundtable in Pensacola, Florida. Concerned citizens and environmental organization and community group members provided input on their relocation experiences. Most commenters requested greater EPA support and involvement for relocation. Ms. Skelton Roberts requested input about the video from the meeting participants. She asked the group to think about the following questions regarding relocation:

- How would the criteria for relocation be different?
- How would EPA handle clean-up on tribal lands?
- What cultural considerations would be important for EPA to recognize?

After viewing the video clips, Ms. Skelton Roberts asked participants to discuss the similarities and differences between the views of the residents in the video (from a primarily minority area in Pensacola, Florida) and those of tribal and native peoples. Participants noted a number of unique points from tribes' perspectives, including:

- In Alaska, people derive sustenance and economic benefit from the land on which they live;
- For tribes, relocation is often not an option;
- A difference exists between deeded property and trust property;
- Some tribal people may not want to be relocated; therefore a relocation policy must be flexible and site-specific;
- The tribe should make the decision whether it wants to be relocated;
- Special conditions in Alaska, such as deep permafrost, allow for different approaches to removing contamination without having to permanently relocate residents; and
- Ground-water contamination is one circumstance with an increased likelihood of the tribal members wanting to relocate, if their artifacts are also moved.

The participants then discussed ways in which EPA can work with tribes. Mr. Sanchez suggested that when the Agency identifies an area of contamination, it not simply use the cheapest method to respond to the problem. Instead, EPA should explore other methods of clean up that may be better for tribal lands. Mr. Harrison commented that the Agency must be held accountable for accomplishing its mandate to protect human health and the environment.

When asked how relocations might be conducted on tribal land, Mr. Edwardson emphasized that the Agency must find the source of contamination and remove it to prevent migration. If necessary, residents should be temporarily relocated while clean-up is being conducted. He added that relocation decisions must consider how much contamination human health can tolerate; how residents can be educated, housed, and fed; and basic infrastructure needs. He also warned against conducting clean-up actions that may actually spread contamination further, such as through dust. Mr. Urbom noted that the law requires a minimum of 90 days written notice for permanent relocations.

Mr. Sanchez commented that jurisdictional issues also are a factor, such as with Indian and non-Indian members of a community considered for relocation. The relocation policy must also consider that each tribe is different. Mr. Holden added that determinations need to be made as to which tribes have jurisdiction. In addition, a plan for the individual community must be developed depending on the functions and infrastructure that exists in the area. Subsistence issues, such as livestock and marine food sources, should also be included, for some these are the only sources of food and income.

Mr. Urbom responded that the preparation of a relocation plan prior to any actual relocation is required by the regulations, including finding decent, safe, and sanitary housing for residents and the logistics of the relocation.

Several tribal representatives emphasized that a specific determination for the maximum length of temporary relocations cannot be made and that time frames and other plans must be made on a tribe-by-tribe basis. Mr. Sanchez noted that tribes are different than other minorities because if they leave the land, they fear that the government will take control of the land and they will not be able to return. Mr. Benally added that the land actually belongs to the tribes and their culture cannot be moved.

Ms. Singer commented that the responsibility lies with EPA to work with the tribes during clean-up efforts. Mr. King and Mr. Edwardson noted that once a contaminated site is identified, tribes need financial resources to verify the findings of the Agency and hire their own experts. Mr. Harrison added that some tribes do not trust government labs, but it is difficult to find individuals that can verify the work.

Mr. Sanchez suggested that in a temporary relocation, security and monitoring be provided on the land to ensure that the cultural artifacts are not disturbed.

Mr. King added that a primary concern in the remedy selection process is decontamination and conducting a health assessment. Mr. Harrison noted that compensation should be issues for long-term health care and ongoing health monitoring for effects of contamination.

Ms. Skelton Roberts then asked participants to list what should be included in the relocation policy. Participants responded with the following items:

- Provisions for funding to move residents back to their homes;
- Consideration for social needs of senior citizens; and
- Communication of accurate information.

What should not be included in the policy:

- Government dictating to tribal members; and
- State intervention or acceptance of relocation.

Ms. Yuhas inquired if community involvement in the relocation plan is required by law. Mr. Urbom responded that the implementing regulations requires input from the affected community in planning the relocation. Mr. Edwardson asked if this could be waived due to national security reasons. Ms. Wells answered that the Superfund law cannot be avoided for this reason.

Mr. Harrison requested that a meeting be held in Alaska related to relocation before the policy is final. Ms. Wells replied that Agency will always take comment on policies.

Ms. Skelton Roberts ended the meeting with a wrap-up and summary discussion. She reviewed the main policy issues as follows:

- Indigenous people are tied to the land culturally and spiritually;
- The infrastructure needs of the community must be considered;
- Health assessments should be conducted before a plan is developed;
- Relocation is a last resort or not an option and must guarantee that residents will return to their land;
- Address transitional aspects;
- When selecting a remedy, consider that a selected action cannot cause harm to another community;
- EPA needs to play a stronger role in holding PRPs responsible;
- Security and monitoring of land;
- Compensation for ongoing health effects;
- Relocation has to be a community or individual decision;
- The policy should be flexible;
- Qualified personnel can be indigenous people; and
- Funding is needed to verify EPA data.

Tribal representatives added that EPA must enforce tribal standards if they are the strictest standards, honor the trust commitment in trusted lands, and recognize that it has authority in some areas but not in others. Opportunities to partner with tribes also exist.

Clara Mickles of EPA's Tribal Office thanked representatives for sharing their experiences and announced that she will take these concerns back to her management.

Ms. Wells closed the meeting by reminded participants that the goal of the gathering is to understand tribal issues and concerns, and she felt that this understanding has been deepened by the discussions. The participants all share similar goals of protecting the environment and full disclosure of information. She also noted that the relocation policy will reflect tribal issues and concerns in a distinct section that considers three elements: 1) a unique connection to the land; 2) statutory provisions specific to tribes; and 3) site-specific approaches to tribal land.

Mr. Harrison and Mr. Sanchez also thanked all participants for their time and efforts.