

**Case Study: APS 69 kV “Southern NN Border to Tuba City” electric power line**

Prepared by:  
Luralene D. Tapahe, Staff Attorney  
Navajo Nation Department of Justice  
May 10, 2006

1. Description:

APS was issued original easement No. IN-19 for the “Tuba City 69 kV Transmission Line” on April 6, 1956 (Exhibit A). This original right-of-way was realigned and another amendment easement No. IN-3 for the “Tuba City to Rare Metals Reroute 69 kV Transmission Line” was issued on July 11<sup>th</sup>, 1960 (Exhibit B). The original right-of-way grant was for a 25 year term and the realignment was retroactive to the date of the original grant, so both easements expired on April 5, 1981.<sup>1</sup> This right-of-way is for a 69kV electric power line running from the southern boundary of the Navajo Nation entering near Arizona State Highway “U.S. 89” and the Navajo community of Gray Mountain to the old uranium mill site just northeast of Tuba City that was once owned and operated by Rare Metals Corporation. As situated on the Navajo Nation, this right-of-way is approximately 36 miles in length. 33.8333 miles lies within the original 1934 Navajo Reservation Boundary, 1.647 miles lies within the Navajo-Tuba City B.I.A. Administrative Area. The right-of-way also occupies .806 miles lies within the Hopi-Moenkopi B.I.A. Administrative Area, and .204 miles of fee lands in the Cameron area.<sup>2</sup>

2. Consent; consideration.

The Navajo Nation apparently gave its consent to this right-of-way grant on November 4<sup>th</sup>, 1955, via a document signed by the Acting Chairman of the Navajo Tribal Council at the time, Mr. Scott Preston (Exhibit C).<sup>3</sup> APS paid to the Tribe the sum of \$5.00 per pole at 10 poles per mile, with the right-of-way estimated at 37 miles in length. The total amount

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<sup>1</sup> In accordance with the practice at the time, there was no separate right-of-way grant document prepared for the original easement or the realignment. The B.I.A. General Superintendent, on behalf of the Secretary, merely placed onto the relevant maps a statement indicating that the right-of-way was issued. I am awaiting receipt of copies of the right-of-way maps.

<sup>2</sup> Information regarding length of the right-of-way has been obtained from APS renewal applications that contain more detailed written information regarding the right-of-way.

<sup>3</sup> This document does not appear to be a resolution of the Navajo Tribal Council, but merely a statement of consent with considerations signed by Mr. Preston.

actually paid of \$3700.00 was considered to be double the estimated surface damages. One half of this amount was retained by the Tribe as compensation, and the other half would be returned to APS after deduction of actual damages. This makes the total consideration to the Tribe for the right-of-way a nominal \$1850.00.

3. Conditions.

According to the document signed by Acting Chairman Preston, APS was to abide by 25 C.F.R., 1954 Supp., 256.7 and applicable regulations, was prohibited from transferring the right-of-way without the Tribe's consent, and was to give Navajo preference in employment for all available positions. If APS goes bankrupt at any time during the right-of-way term, the facilities are forfeited to the Tribe. At the time of the original grant, the only terms or conditions applied to the federal grant of easement were contained in the statutes and regulations in place at that time, the Act of February 5, 1948 (62 Stat. 17) and 25 C.F.R. 1955 Part 256, and the requirement that APS obtain the consent of the Tribe.

4. Background:

The right-of-way was obtained for purposes of construction of an electric power line that was to feed power to the Rare Metals site for uranium mining activities.<sup>4</sup> An agreement for this purpose was entered into between APS and the Rare Metals Corporation on March 1, 1956.<sup>5</sup>

5. Renewals attempted.

APS has filed the following renewal applications for the right-of-way: March 23, 1981, December of 1981, June 30, 1982 (Exhibit D), on July 1, 1982 a revised application was submitted with additional information regarding Navajo and Hopi lands partitioning, October of 1982, July 17, 1990, July and August of 1995, on February 2, 1996 a

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<sup>4</sup> Rare Metals had a contract with the federal government's atomic energy and weapons agency, the Atomic Energy Commission. See Exhibit G.

<sup>5</sup> The Navajo Nation is aware of the APS-Rare Metals agreement because it is referred to in other documents in the Nation's files. However, NNDOJ does not have possession of this agreement.

revised application was submitted with information depicting substations (Exhibit E), September of 2003, September of 2004, and September 2005 (most recent).<sup>6</sup>

6. People served by the line.

APS uses the 69 kV line for retail sales to commercial and residential customers primarily located in the communities of Tuba City and Cameron, Navajo Nation (Arizona).<sup>7</sup> These two communities are the areas on the Navajo Reservation within APS' service territory with the highest concentration of population.<sup>8</sup> Over the decades, APS has obtained right-of-ways for purposes of constructing residential distribution and service lines to provide electricity to homes situated near the 69 kV line (exemplar attached as Exhibit H). The Navajo Nation has routinely and consistently waived the general requirement for consideration for these service line rights-of-ways, since APS serves Navajo residents with the residential lines constructed pursuant to these rights-of-way.

7. APS service lines; opposition to NN jurisdiction; impact on Navajo residents.

In 1997, the U.S. Supreme Court decided a case in a manner extremely adverse to tribal interests nationwide. In the decision, Strate v. A-1 Contractors<sup>9</sup>, the Court held that any tribal lands alienated to non-Indians would be considered "akin to fee land" and not subject to the civil jurisdiction of the tribe, as it pertains to the activities of non-Indians. The Court explained that the only way such land could be retained by the tribe, in a governmental jurisdictional sense, was if the right-of-way grant for the land contained certain "gatekeeping" language explicitly preserving the tribe's jurisdiction. Thus, after the decision, the Navajo Nation governmental

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<sup>6</sup> Information on the various renewal requests was obtained from a letter sent to the B.I.A. from APS dated September 7, 2004. See Exhibit F. I have attached hereto copies of those renewal requests in the possession of NNDOJ. More complete documentation pertaining to the other renewal applications listed can be obtained from the Navajo Land Department.

<sup>7</sup> The Rare Metals facility shut down in September of 1966. However, Navajo residents in the area have suffered adverse health effects for decades as a result of the improper handling of the radioactive materials left at the site and the failure of the U.S. Department of Energy to conduct adequate remediation of the land. See Exhibit G.

<sup>8</sup> According to Navajo Nation Census data from calendar year 2000, Tuba City had an Indian population of approximately 8200 residents, and Cameron had an Indian population of approximately 1200 residents.

<sup>9</sup> 520 U.S. 438 (1997)

entity established to grant the Nation's consent to rights-of-ways, the Resources Committee of the Navajo Nation Council, took a proactive stance in accordance with recommendations from the Nation's attorneys. The Committee began to insist on "standard jurisdictional terms and conditions," considered necessary in light of the Strate decision, to protect the Navajo Nation's governmental jurisdiction and sovereignty over its own lands and non-Indian activity on those lands.

Prior to the Resources Committee's action, APS routinely applied for rights-of-way for electric lines, the rights-of-way were approved, and APS served Navajo residents without delay. After the Nation adopted the practice of attaching the jurisdictional terms and conditions, APS refused to agree to such conditions and stopped applying for rights-of-way. See Exhibit I. In fact, APS began telling residents seeking service that it would not accept any more applications because the Nation's new conditions were unacceptable.

After 1997, the Nation took the position that APS should not be negotiated with because of its refusal to accept the standard jurisdictional provisions that were considered acceptable by many other non-Indian companies doing business on the Navajo Nation. Then, in 2000, the need of many Navajo residents lacking home electricity became a serious issue for the Navajo Nation government, and the NNDOJ then began what would become a protracted process of communication with APS to negotiate modified jurisdictional terms and conditions that would both satisfy APS' concerns and still protect the Nation's sovereignty and governmental authority over its own lands. Such negotiations continued sporadically, and in early 2001, the negotiators were extremely close to reaching agreement on a modified "service line agreement" that would have taken care of the Nation's consent and satisfied all federal statutory and regulatory requirements for service line construction.

Unfortunately, that year the Supreme Court decided Atkinson Trading Co. v. Shirley.<sup>10</sup> Once this decision was issued, APS reneged on language in the negotiated agreement that it had accepted prior to this decision. The Atkinson decision ruled against Navajo Nation jurisdiction over non-Indians, and the APS negotiators explained that "federal law" prohibits APS from accepting the Nation's jurisdiction, which, in the opinion of the Nation's negotiators, was completely specious reasoning.

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<sup>10</sup> 532 U.S. 645 (2001)

Negotiations for a modified service line agreement then broke down at that point, for a period of several years. Only in late 2003 did negotiations resume, and in December of 2005 a tentative agreement was reached, which is now in the Navajo Nation approval process. Although federal approval for service line agreements is not necessary nor provided for in federal statutes or regulations, APS is insisting that B.I.A. give its assurance that the negotiated agreement need not be approved by the Secretary.

Due to APS resistance over the years to the Nation's attempts to protect its jurisdiction, there have been dozens, perhaps by now hundreds, of Navajo residents living in APS' service territory that have had no ability to receive electric service in their homes. These people have lived without basic necessities for decades and have been waiting for some kind of solution.

#### 8. Attempts at NTUA purchase.

As early as the mid 1960's the Navajo Tribal Utility Authority (NTUA) has been conducting negotiations with APS for the sale of APS facilities in the area to NTUA. The Nation has desired that its utility take over service obligations to the Navajo residents in the area, and such a takeover would eliminate the conflict over tribal jurisdiction. Unfortunately, these negotiations have suffered fits and starts over the decades, but to date nothing of real substance has been achieved that would move the parties close to an agreement for sale. The negotiations have been seriously complicated by the existence of the Hopi Reservation within APS' service territory, since APS refuses to sell only the portion of its facilities located on the Navajo Nation but insists on selling the system as a whole. The Hopi Tribe must therefore be involved in any negotiations for sale and give its final approval.

The most recent negotiations have taken place in late 2005. APS has consistently taken the position that it requires a payment reflecting original cost, less depreciation, plus reimbursement for any taxes assessed against APS for revenues from the sale of its facilities. The parties have each conducted their own evaluation of the value of the system, and have consistently been several million dollars apart in their respective estimates. Thus, no agreement seems imminent.<sup>11</sup>

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<sup>11</sup> The general information provided herein regarding the various negotiated proposals that have passed between APS and NTUA over the decades has been taken from confidential documents within the NNDOJ, and such documents will not be produced for purposes of this case study. Disclosure of specific information must be requested from NTUA and APS.

9. Status of ROW to date.

Since 1981 when the subject right-of-way expired, APS has been in trespass for this 69 kV line. Although APS most recently submitted a renewal application in September of 2005, most of its prior applications could not be approved or even acted upon by either the Navajo Nation or the B.I.A. because federal requirements that were not in place in 1956 had to be met in order for APS' application to be considered. Such requirements pertain to new archeological and environmental clearances, among other mandates. See Exhibit J.

Action upon the renewal requests has been delayed because only within the last year has APS addressed and completed these new federal mandates. See Exhibit K. In addition, the Nation has serious concerns about consenting to any renewal in light of APS' stern opposition to the Nation's jurisdictional terms and conditions. See Exhibit L. Although modified terms were negotiated for the service line agreement, the Nation has given no indication to APS that such modified terms would be acceptable to the Nation for a more substantial property right grant to APS, a right-of-way that could easily be considered fee land not subject to the Nation's jurisdiction by the federal courts in any dispute that should arise.

UNITED STATES  
 DEPT. OF THE INT.  
 Bureau of Indian Affairs  
 Navajo Agency  
 Window Rock, Arizona

APPROVED ~~4-6-56~~ for a period  
 of 25 years from the date subject to the provisions  
 of the Act of Feb. 5, 1948 (62 Stat. 17), and Departmental  
 Regulations 25 C.F.R. 1955 Pocket Supplement, Part 255,  
 and subject further to Tribal Consent to Grant of Right of Way  
 dated October 11, 1955.

*[Signature]*  
 Chairman, Navajo Tribal Council  
*[Signature]*  
 General Superintendent

DWG.  
 # E-10363

EXHIBIT  
 A

FEET -----21000.0  
ACRES-----9.6692  
MILES-----3.9885  
NEW POLES-----43  
DOWN GUYS-----5

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF INDIAN AFFAIRS  
NAVAJO AGENCY  
WINDOW ROCK, ARIZONA

Relocation of portion of 69 kv powerline right of way approved April 6, 1956, APPROVED/ CONTAINING 1 SHEETS OF WHICH THIS IS SHEET NO. 1, FOR A PERIOD NOT TO EXCEED 25 YEARS FROM 4/6/56 PURSUANT TO THE PROVISIONS OF THE ACT OF FEB. 5, 1948 (62 STAT. 17), AND DEPARTMENTAL REGULATIONS, 25 CFR PART 161, AND SUBJECT TO ANY PRIOR, VALID, EXISTING. RIGHT OR ADVERSE CLAIM. Subject further to conditions contained in approval of 4/6/56 and conditions contained in tribal consent of December 31, 1959.

*s/ Clarence Ashby*  
actg GENERAL SUPERINTENDENT

DATE: JUL 11 1960

NOTE:

RIGHT OF WAY WIDTH TO BE 5 FEET ON THE NORTH SIDE  
OF CENTER LINE AND 15 FEET ON THE SOUTH SIDE OF  
CENTER LINE OF POWER LINE.

TUBA CITY TO RARE METALS REROUTE  
69 KV TRANSMISSION LINE  
APPLICATION FOR RIGHT OF WAY ON  
NAVAJO INDIAN RESERVATION LAND  
TOWNSHIPS 32 NORTH RANGES 11&12 EAST  
GILA & SALT RIVER BASE AND MERIDIAN  
ARIZONA PUBLIC SERVICE COMPANY  
PHOENIX, ARIZONA

DRAWN BY W.D.T.  
TRACED BY W.D.T.

CHECKED BY W.J.G.

NOVEMBER 20, 1959  
SCALE: 1"=1000'

*Reroute*  
*July, 11*  
*1960*

E-14207

EXHIBIT  
B

TRIBAL CONSENT TO GRANT OF RIGHT OF WAY

The Navajo Tribe of Indians, hereinafter referred to as "Tribe," as landowner, hereby gives its consent to the grant of a right of way for a duration of twenty-five (25) years to the Arizona Public Service Company, a corporation, hereinafter referred to as "Company," for the purpose of constructing and maintaining a 69 kv power line across Tribal land from a point near the intersection of Highway 89 with the southern boundary of the Navajo Reservation to the Rare Metal Corporation of America mill site near Tuba City, Arizona, and in addition gives its consent to the immediate commencement of construction of said power line. The above consents are given upon the following conditions:

1. The above consents will not be effective until the Company shall have endorsed its acceptance of the conditions thereof at the end of this document and caused the signature of the officer so endorsing on its behalf to be acknowledged before a notary public.

2. The Company will pay to the Tribe simultaneously upon acceptance of this consent the sum of \$3,700.00 as double the estimated total damages, consisting of \$5.00 per pole at ten (10) poles per mile for the said right of way, estimated at thirty-seven (37) miles in length. One half of this sum will be retained as compensation to the Tribe, and the remaining half, after deducting any actual damages which may be caused to the Tribe, the United States, or to

EXHIBIT

C

private persons occupying Tribal land, will be returned to the Company upon satisfactory completion of the said power line and compliance with the conditions hereof and all applicable regulations. In the event of any dispute as to the extent of such damages the opinion of the General Superintendent at Window Rock, Arizona, shall be conclusive.

3. The Company will comply with 25 CFR, 1954 Supp., 256.7 and all applicable regulations.

4. If at any time during the life of the right of way the Company should be declared insolvent and go into bankruptcy or receivership or make an assignment to creditors, any and all interests of the Company in the power line installed over the right of way shall forthwith be forfeited to the Tribe. There shall be no sale, transfer, or conveyance of the right of way or of the power line installed thereon to any other person, corporation, or association, whatsoever, without the consent of the Navajo Tribal Council.

5. In connection with the construction and maintenance of the power line over the right of way above consented to, the Company will employ Navajo Indians in all positions for which they are available and qualified.

IN WITNESS WHEREOF the Acting Chairman of the Navajo Tribal Council has signed his name hereto on behalf of the Navajo Tribe of Indians this 11<sup>th</sup> day of October, 1955.

THE NAVAJO TRIBE OF INDIANS

By Scott Preston  
Acting Chairman  
Navajo Tribal Council

The above conditions are hereby accepted this 4<sup>th</sup>  
day of NOVEMBER, 1955.

ARIZONA PUBLIC SERVICE COMPANY

By [Signature]  
Title Vice-President

Attest [Signature]  
Title Assistant Secretary

State of Arizona: SS  
County of Apache:

This instrument was acknowledged before me this 11<sup>th</sup>  
day of October, 1955, by Scott Preston, who acknowledged to me that he  
is acting Chairman of the Navajo Tribal Council and that he executed  
said instrument in his official capacity, on behalf of the Navajo Tribe  
of Indians.



Lawrence C. Huerta  
Notary Public



APS # INH-351  
"Tuba City 69kV Transmission  
Line"

BEFORE THE DEPARTMENT OF INTERIOR  
BUREAU OF INDIAN AFFAIRS

RECEIVED  
REAL PROPERTY MANAGEMENT  
TUBA CITY, ARIZONA '5

APPLICATION FOR EASEMENT

AM JUL 24 1990 PM  
7 8 9 10 11 12 1 2 3 4 5 6

ARIZONA PUBLIC SERVICE COMPANY, a corporation organized and existing under and by virtue of the laws of the State of Arizona, and hereinafter designated as Applicant, hereby makes application for renewal of easement and right of way for a period of twenty-five (25) years, in, under, on, over and across Indian lands located within Coconino County, Arizona, pursuant to the Act of February 5, 1948 (62 Stat. 17; 25 U.S.C. 323) and in accordance with applicable regulations contained in 25 CFR 169.19. The right of way will be used for continued operation and maintenance of an existing overhead 69kV line, and appurtenant facilities, along with the right to ingress thereto and egress therefrom on existing roads. The right of way will cross and occupy Indian lands as follows:

	<u>FEET</u>	<u>ACRES</u>
Bennett Freeze Order Area lying within 1934 Boundary Bill Area	= 178,638.52	82.019
Navajo-Tuba City Administrative Area	= 8,694.94	3.992
Hopi-Moenkopi Administrative Area	= 4,257.04	1.955
Private Lands ( <u>not included as a part of this application</u> )	= 1,079.00	0.495

The location of said right of way is more particularly described on Exhibit "A" attached hereto, and as further delineated on the accompanying map numbered E-80414 (2 sheets) which has been prepared in compliance with 25 CFR 169.6 and which, by this reference is made a part hereof.

The Articles of Incorporation of the Applicant and a list of names and addresses of principal Officers is on file with the Phoenix area office, Bureau of Indian Affairs.

All notices, requests and correspondence shall be directed to:

Arizona Public Service Company  
Land Department - Station 5221



It is requested that the Tribe agree to waive all claims for compensation in connection with said electric and gas lines as provided in Paragraph (b) below, since the lines will be of distinct benefit to the members of the Tribe.

ARIZONA PUBLIC SERVICE COMPANY agrees:

- (a) To construct and maintain the right of way in a workmanlike manner.
- (b) To pay promptly all damages and compensation, in addition to the deposit made pursuant to 169.4, determined by the Secretary to be due the landowners and authorized users and occupants of the land on account of the survey, granting, construction and maintenance of the right of way.
- (c) To indemnify the landowners and authorized users and occupants against any liability for loss of life, personal injury and property damage arising from the construction, maintenance, occupancy or use of the lands by the Applicant, his employees, contractors and their employees, or sub-contractors and their employees.
- (d) To restore the lands as nearly as may be possible to their original condition upon the completion of construction to the extent compatible with the purpose for which the right of way was granted.
- (e) To clear and keep clear the lands within the right of way to the extent compatible with the purpose of the right of way; and to dispose of all vegetative and other material cut, uprooted, or otherwise accumulated during the construction and maintenance of the project.
- (f) To take soil and resource conservation and protection measures, including weed control, on the land covered by the right of way.

- (g) To do everything reasonably within its power to prevent and suppress fires on or near the lands to be occupied under the right of way.
- (h) To build and repair such roads, fences, and trails as may be destroyed or injured by construction work and to build and maintain necessary and suitable crossings for all roads and trails that intersect the works constructed, maintained, or operated under the right of way.
- (i) That upon revocation or termination of the right of way the Applicant shall, so far as is reasonably possible, restore the lands to their original condition.
- (j) To at all times keep the Secretary informed of its address, and in case of corporations, of the address of its principal place of business and of the names and addresses of its principal Officers.
- (k) That the Applicant will not interfere with the use of the lands by or under authority of the landowners for any purpose not inconsistent with the primary purpose for which the rights of way were granted.

IN WITNESS WHEREOF, the ARIZONA PUBLIC SERVICE COMPANY has caused this Application to be executed this 30th day of June, 1982.

ARIZONA PUBLIC SERVICE COMPANY

By William A. Simson  
William A. Simson  
Manager, Land & Survey Dept.

EXHIBIT "A"

IN-351

"TUBA CITY 69kV TRANSMISSION LINE"

The following centerline legal description of right of way is a part of Arizona Public Service Company's application for grant of easement for right of way. This description is intended to describe the centerline of an existing overhead 69kV electric line which was constructed by virtue of easement Number IN-19, "Tuba City 69kV Transmission Line", as granted on the 6th day of April, 1956; and subsequent amendment easement IN-3, "Tuba City to Rare Metals Reroute 69kV Transmission Line", as granted on the 11th day of July, 1960. Both easements terminated on April 5, 1981. A new plat of survey, drawing Number E-80414 (2 sheets), further delineates the requested right of way and is also a part of this application.

CENTERLINE LEGAL DESCRIPTION OF RIGHT OF WAY

The subject electric line lies within a portion of Sections 3, 4, 9, 16, 20, 21, 29 and 32, of Township 28 North, Range 9 East; Sections 27, 33 and 34 and "unsurveyed" Sections 2, 11, 14, 22 and 23, of Township 29 North, Range 9 East; "unsurveyed" Sections 1, 2, 11, 14, 23, 26 and 35, of Township 30 North, Range 9 East; "unsurveyed" Section 36 of Township 31 North, Range 9 East; "unsurveyed" Sections 1, 2, 10, 11, 15, 16, 20, 21, 29, 30 and 31, of Township 31 North, Range 10 East; Section 36 of Township 32 North, Range 10 East; Sections 23, 24, 26, 27, 28, 29, 31 and 32, of Township 32 North, Range 11 East; Sections 17, 18, 19 and 20, of Township 32 North, Range 11 East; all of the above descriptions are based on Gila and Salt River Base and Meridian and lie within Coconino County, Arizona. Said right of way is more particularly described as follows:

A 20 foot wide right of way lying ten (10) feet on each side of the following described centerline:

BEGINNING at a point lying on the South line of Section 32, Township 28 North, Range 9 east which lies South 89°56' East a distance of 1,564 feet

from the Southwest section corner thereof, said point being further described as lying on the South boundary line of the Navajo Reservation as defined by the Act of June 14, 1934 (48 Stat. 960), and as included within the Bennett Freeze Order of July 8, 1966; thence, entering Indian lands subject to the Bennett Freeze Order, North  $23^{\circ}43'$  East a distance of 2,434 feet; thence North  $15^{\circ}06'$  East a distance of 29,161 feet; thence North  $27^{\circ}39'$  East a distance of approximately 13,607 feet to a point lying on the North line of Section 27, Township 29 North, Range 9 East, and which point lies North  $89^{\circ}58'$  West a distance of approximately 500 feet from the Northeast section corner thereof; thence, leaving Indian lands and entering a parcel of privately-owned land, North  $27^{\circ}39'$  East a distance of approximately 1,079 feet to a point lying on the Northerly property line of the aforesaid private parcel and which property line is further described as the Southerly meander line of the Little Colorado River; thence, leaving privately-owned lands and entering Indian lands subject to the Bennett Freeze Order, North  $27^{\circ}39'$  East a distance of 3,517 feet; thence North  $0^{\circ}39'$  East a distance of 12,937.94 feet; thence North  $12^{\circ}06'55''$  West a distance of 475.84 feet; thence North  $6^{\circ}02'25''$  East a distance of 1,135.98 feet; thence North  $0^{\circ}39'$  East a distance of 27,067.03 feet; thence North  $30^{\circ}59'$  East a distance of 8,250 feet; thence North  $56^{\circ}17'$  East a distance of 13,550 feet; thence North  $42^{\circ}17'$  East a distance of 17,911 feet; thence North  $30^{\circ}01'$  East a distance of 9,227 feet; thence North  $53^{\circ}31'$  East a distance of 4,360.4 feet; thence North  $81^{\circ}24'$  East a distance of 9,882.2 feet; thence North  $25^{\circ}40'$  East a distance of 63.46 feet to a point lying within the Southwest quarter of Section 32, Township 32 North Range 11 East, which point lies on the southerly boundary of the Navajo-Tuba City Administrative Area; thence, leaving Indian lands subject to the Bennett Freeze Order and entering the Tuba City Administrative Area, North  $25^{\circ}40'$  East a distance of 4,630.94 feet; thence North  $80^{\circ}51'$  East a distance of 4,064 feet to a point lying within the Southwest quarter of Section 28, Township 32 North, Range 11 East, which point lies on the common

Administrative Area; thence, leaving the Tuba City Administrative Area and entering the Moenkopi Administrative Area, North 80°51' East a distance of 4,257.04 feet to a point lying on the East line of the above said Section 28, said point lying on the Easterly boundary of the Moenkopi Administrative Area; thence, leaving the Moenkopi Administrative Area and entering Indian lands subject to the Bennett Freeze Order, North 80°51' East a distance of 2,329.96 feet to a point hereinafter designated Point "A".

A 20 foot wide right of way lying five (5) feet Northerly and 15 feet Southerly of the following described centerline:

BEGINNING at the above designated Point "A"; thence North 61°27' East a distance of 3,764 feet; thence North 62°01' East a distance of 617 feet; thence North 62°06' East a distance of 200 feet; thence North 63°06' East a distance of 290 feet; thence North 64°39' East a distance of 536 feet; thence North 65°39' East a distance of 15,154 feet to a point hereinafter designated as Point "B".

A 20 foot wide right of way lying ten (10) feet on each side of the following described centerline:

BEGINNING at the above designated Point "B"; thence North 89°50' East a distance of 1,428 feet; thence North 65°34' East a distance of 438.5 feet to a Point of Termination.

-AND-

BEGINNING at the above designated Point "B"; thence North 12°15' West a distance of 333 feet to a Point of Termination.

Said right of way is broken down into the following subdivisions of distances and acreages:

	<u>FEET</u>	<u>ACRES</u>
Bennett Freeze Order Area lying within 1934 Boundary		
Bill Area	= 178,638.52	82.019

IN-351

"TUBA CITY 69kV TRANSMISSION LINE"

APPLICANTS CERTIFICATE

I, WILLIAM A. SIMSON, do hereby certify, under oath, that I am Manager of Land and Survey for Arizona Public Service Company, hereinafter designated the Applicant; that the subject 69kV electric line, for which the Applicant is seeking renewal for an additional 25-year term under the provisions of 25 CFR 169.19, was constructed by virtue of grant of easement Number IN-19, as granted on the 6th day of April, 1956, and as subsequently modified by amendment easement Number IN-3, as granted on the 11th day of July, 1960; that there is no change in location; and that the physical alignment of said electric line does not substantially deviate from that depicted on the accompanying plat of survey, map Number E-80414 (2 sheets), "Tuba City 69kV Transmission line".

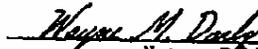
Date: June 30, 1982

  
\_\_\_\_\_  
William A. Simson, Manager  
Land and Survey Department

STATE OF ARIZONA    )  
                          ) ss.  
County of Maricopa    )

On June 30, 1982, before me, WAYNE M. DARBY, a Notary Public in and for the County of Maricopa, State of Arizona, personally appeared WILLIAM A. SIMSON, known to me to be the person whose name is subscribed to the within Certificate and hereby acknowledged.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

  
\_\_\_\_\_  
Notary Public

My Commission Expires:

March 14, 1985



371.572

2950.00  
ENTER

TRANSFER ITS

1.847 MI.	82,019 AC.
1.847 MI.	3,992 AC.
0.808 MI.	1,955 AC.
0.204 MI.	0,495 AC.

INH-351

**TUBA CITY**  
**TRANSMISSION LINE**  
 RIGHT-OF-WAY  
 IN RESERVATION LANDS  
 IN T1S 27 TO 32  
 R1E 10 TO 12 EAST  
 RIVER BASE & MERIDIAN

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ARIZONA **PUBLIC SERVICE** COMPANY  
 PHOENIX, ARIZONA

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DRAWN BY: \_\_\_\_\_ DATE: 1-21-51  
 CHECKED BY: \_\_\_\_\_ SCALE: 1"=125'

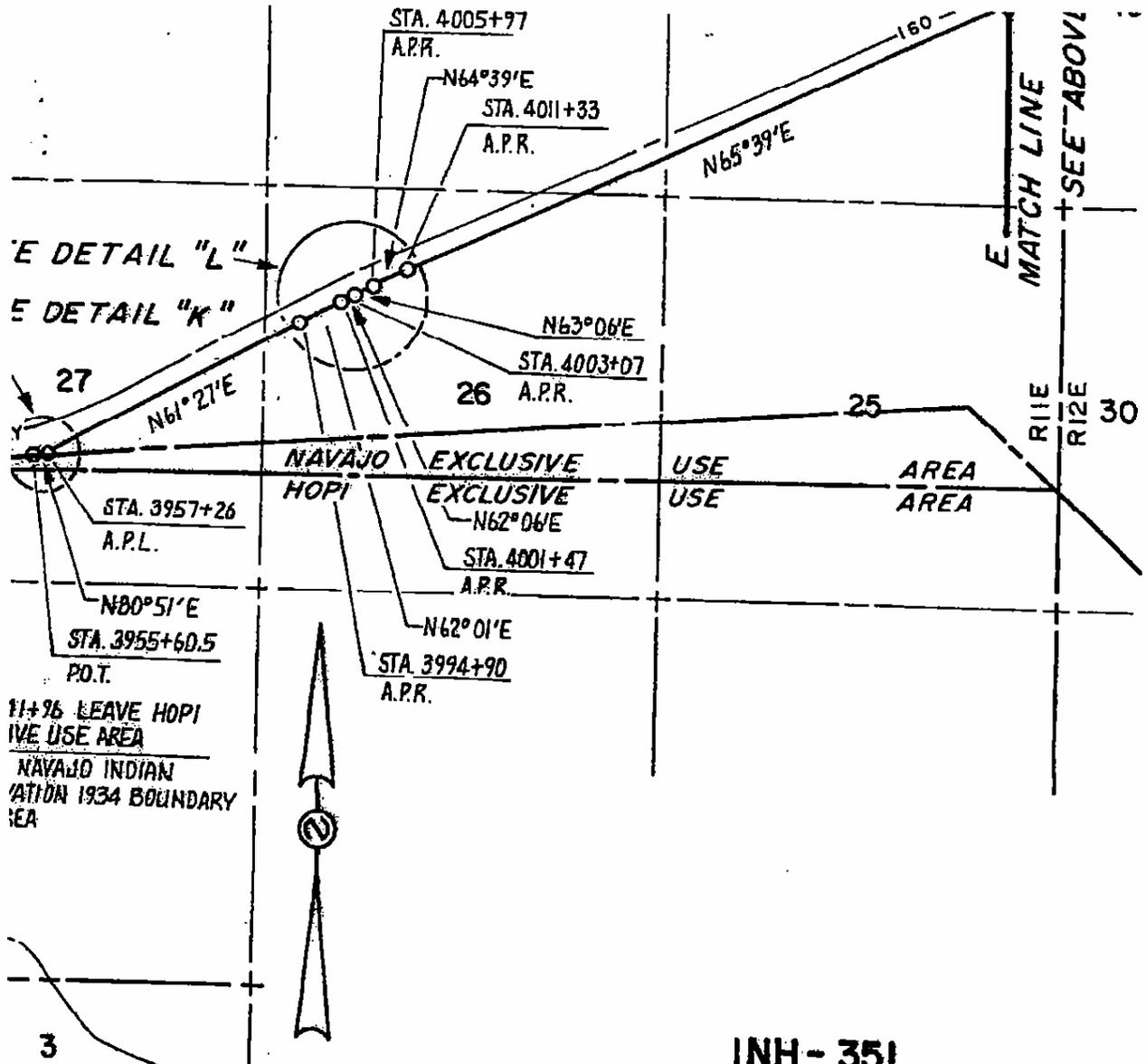
NOTE: THE FOLLOWING LIST OF MILEAGES AND ACREAGES IS BASED ON SURVEY MEASUREMENTS AND ON CALCULATIONS DERIVED FROM G.L.O.'S AND PROTRACTION DIAGRAM NO. 41. ADDITIONALLY, HOPI EXCLUSIVE USE AREA BOUNDARIES ARE BASED ON THE MOST RECENT BENNETT FREEZE AREA LAND PARTITIONMENT WHICH HAS NOT YET BEEN SURVEYED AND IS UNDER APPEAL IN FEDERAL COURT.

	<u>Elec. Line</u>	<u>Elec. Line</u>	<u>Substation</u>
25 NAVAJO INDIAN RESERVATION 1934 BOUNDARY BILL AREA	22.73 MI.	= 55.10 AC.	0.40 AC.
NAVAJO TUBA CITY ADMINISTRATIVE AREA	0.72 MI.	= 1.76 AC.	0.30 AC.
NAVAJO TRIBAL TRUST LANDS (Checkerboard)	8.34 MI.	= 15.36 AC.	0.07 AC.
PRIVATE LANDS CAMERON AREA	0.21 MI.	= 0.52 AC.	0



**INH-351**

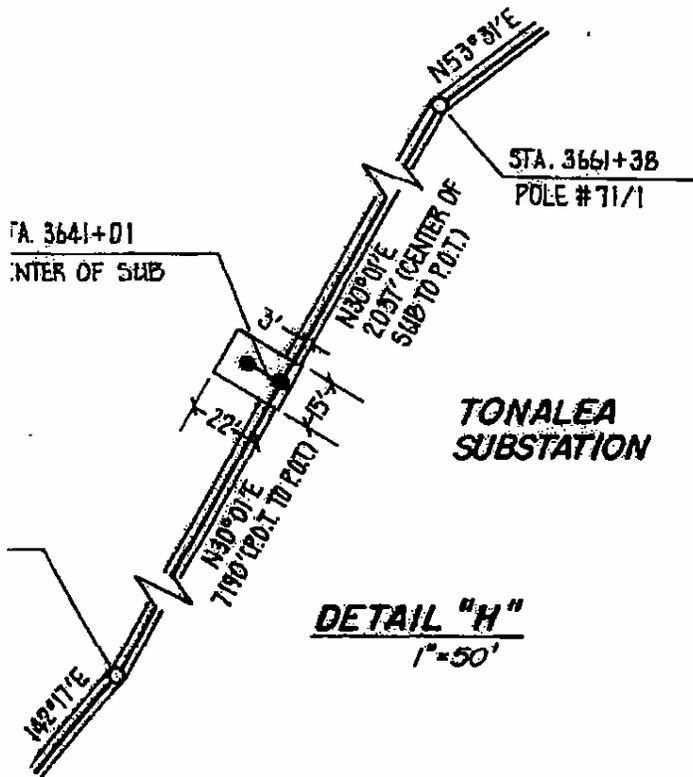
<b>TUBA CITY</b>		
<b>69KV TRANSMISSION LINE</b>		
<b>APPLICATION FOR RIGHT-OF-WAY</b>		
<b>ACROSS INDIAN RESERVATION LANDS</b>		
LOCATED IN TPS. 27 TO 32		
NORTH & RS. 9 TO 12 EAST		
GILA & SALT RIVER BASE & MERIDIAN		
ARIZONA	<b>PUBLIC SERVICE</b>	COMPANY
PHOENIX, ARIZONA		
DRAWN	<u>RWS</u>	DATE <u>1-29-82</u>
CHECKED	<u>JK</u>	SCALE <u>1" = 2000'</u>



**INH-351**

**TUBA CITY**  
**69KV TRANSMISSION LINE**  
**APPLICATION FOR RIGHT-OF-WAY**  
**ACROSS INDIAN RESERVATION LANDS**  
 LOCATED IN TPS. 27 TO 32  
 NORTH & RS. 9 TO 12 EAST  
**GILA & SALT RIVER BASE & MERIDIAN**  
 ARIZONA **PUBLIC SERVICE** COMPANY  
 PHOENIX, ARIZONA  
 DRAWN RWS  
 CHECKED JK  
 DATE 1-29-82  
 SCALE 1"=2000'

E-0001A SHEET 2 OF 2



**INH-351**

<b>TUBA CITY</b>		
<b>69KV TRANSMISSION LINE</b>		
<b>APPLICATION FOR RIGHT-OF-WAY</b>		
<b>ACROSS INDIAN RESERVATION LANDS</b>		
LOCATED IN TPS. 27 TO 32		
NORTH & RS. 9 TO 12 EAST		
GILA & SALT RIVER BASE & MERIDIAN		
ARIZONA	<b>PUBLIC SERVICE</b>	COMPANY
PHOENIX, ARIZONA		
DRAWN	<u>RWS</u>	DATE
CHECKED	<u>JK</u>	SCALE
		<u>1-29-82</u>
		<u>1" = 2000'</u>

**E-80414 SHEET 3 OF 3**

BEFORE THE DEPARTMENT OF INTERIOR  
BUREAU OF INDIAN AFFAIRS

APPLICATION FOR EASEMENT

ARIZONA PUBLIC SERVICE COMPANY, a corporation organized and existing under and by virtue of the laws of the State of Arizona, and hereinafter designated as Applicant, hereby makes application for renewal of easement for right of way for a period of twenty-five (25) years retroactive from April 6, 1981, in, under, on, over and across Indian lands located within Coconino County, Arizona, pursuant to the Act of February 5, 1948 (62 Stat. 17; 25 U.S.C. 323), and in accordance with applicable regulations contained in 25 CFR 169.19.

The right of way will be used for continued operation and maintenance of an existing overhead 69kV line, substations, and appurtenant facilities, along with the right to ingress thereto and egress therefrom on existing roads. The right of way will cross and occupy Indian lands as follows:

	<u>Electric Line</u>		<u>Substation</u>
	<u>Feet</u>	<u>Acres</u>	<u>Acres</u>
Navajo Indian Reservation 1934 Boundary Bill Area	120,010.30	55.10	0.397
Navajo Tuba City Administrative Area	3,826.54	1.76	0.300
Navajo Tribal Trust Lands	33,452.38	15.36	0.069
Private Lands (not included as a part of this application)	1,124.30	0.516	0

The location of said right of way is more particularly described on Exhibit "A" attached hereto, and as further delineated on the accompanying map numbered E-80414 (3 sheets) which has been prepared in compliance with 25 CFR 169.6 and which, by this reference, is made a part hereof.

EXHIBIT

E

The Articles of Incorporation of the Applicant and a list of names and addresses of principal officers are on file with the Phoenix Area Office and the Navajo Area Office, Bureau of Indian Affairs.

All notices, requests and correspondence shall be directed to:

Arizona Public Service Company  
Right of Way Department, Station 3148  
P. O. Box 53933  
Phoenix, AZ 85072-3933

ARIZONA PUBLIC SERVICE COMPANY (APPLICANT) agrees:

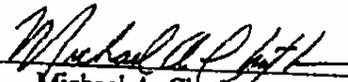
- (a) To construct and maintain the right of way in a workmanlike manner.
- (b) To pay promptly all damages and compensation, in addition to the deposit made pursuant to 169.4, determined by the Secretary to be due the landowners and authorized users and occupants of the land on account of the survey, granting, construction and maintenance of the right of way.
- (c) To indemnify the landowners and authorized users and occupants against any liability for loss of life, personal injury and property damage arising from the construction, maintenance, occupancy or use of the lands by the Applicant, his employees, contractors and their employees, or subcontractors and their employees.
- (d) To restore the lands as nearly as may be possible to their original condition upon the completion of construction to the extent compatible with the purpose for which the right of way was granted.
- (e) To clear and keep clear the lands within the right of way to the extent compatible with the purpose of the right of way; and to dispose of all vegetative and other material cut, uprooted, or otherwise accumulated during the construction and maintenance of the project.
- (f) To take soil and resource conservation and protection measures, including weed control, on the land covered by the right of way.
- (g) To do everything reasonably within its power to prevent and suppress fires on or near the lands to be occupied under the right of way.

- (h) To build and repair such roads, fences, and trails as may be destroyed or injured by construction work and to build and maintain necessary and suitable crossings for all roads and trails that intersect the works constructed, maintained, or operated under the right of way.
- (i) That upon revocation or termination of the right of way the Applicant shall, so far as is reasonably possible, restore the lands to their original condition.
- (j) To at all times keep the Secretary informed of its address, and in case of corporations, of the address of its principal place of business and of the names and addresses of its principal officers.
- (k) That the Applicant will not interfere with the use of the lands by or under authority of the landowners for any purpose inconsistent with the primary purpose for which the rights of way were granted.

IN WITNESS WHEREOF, this Application is executed this 2nd day of February, 1996. The term of this renewal shall be retroactive to the date of expiration of the original term of the easement — April 5, 1981.

ARIZONA PUBLIC SERVICE COMPANY

By:



Michael A. Clatham

Section Leader, Real Estate Services

**EXHIBIT "A"**

**LEGAL DESCRIPTION OF RIGHT OF WAY**

The following legal description of right of way is a part of Arizona Public Service Company's application for grant of right of way. The description is intended to describe the centerline of an existing overhead 69kV electric line which was constructed under authority of easement entitled "Tuba City 69kV Transmission Line," as granted on April 6, 1956. The initial 25-year term of this easement expired on April 5, 1981. Additionally, this description covers electric distribution substation boundaries which were not included in the original filing. A revised plat of survey, drawing number E-80414, further delineates the requested right of way and is part of this application.

**TRANSMISSION LINE LEGAL DESCRIPTION OF RIGHT OF WAY**

The subject electric line lies within a portion of Sections 3, 4, 9, 16, 20, 21, 29, and 32 of Township 28 North, Range 9 East; Sections 27, 33, 34, and "unsurveyed" Sections 2, 11, 14, 22, 23, 27, 33, and 34 of Township 29 North, Range 9 East; "unsurveyed" Sections 1, 2, 11, 14, 23, 26, and 35 of Township 30 North, Range 9 East; "unsurveyed" Section 36 of Township 31 North, Range 9 East; "unsurveyed" Sections 1, 2, 10, 11, 15, 16, 20, 21, 29, 30, and 31 of Township 31 North, Range 10 East; Section 36 of Township 32 North, Range 10 East; and Section 32 of Township 32 North, Range 11 East; all of the above descriptions are based on Gila and Salt River Meridian and lie within Coconino County, Arizona. The 69kV transmission line right of way is more particularly described as follows:

A twenty (20) foot right of way lying ten (10) feet on each side of the following described centerline:

BEGINNING at a point lying on the South line of Section 32, Township 28 North, Range 9 East, which lies South 89° 58' East a distance of 1,564 feet from the Southwest section corner thereof, said point being further described as lying on the South boundary line of the Navajo Indian

Reservation as defined by the Act of June 14, 1934 (48 Stat. 960), and as included within the Bennett Freeze Order of July 8, 1966; thence North 23° 43' East a distance of 2,434 feet; thence North 15° 06' East a distance of 108 feet to a point lying on the South line of Black Mesa Substation, said point being hereinafter designated as POINT "A"; thence continuing North 15° 06' East a distance of 29,053 feet; thence North 27° 39' East a distance of 13,416 feet to the Southwest corner of Cameron Substation, said point being hereinafter designated as POINT "B"; thence continuing North 27° 39' East a distance of approximately 317 feet to a point lying on the North line of Section 27, Township 29 North, Range 9 East, and which point lies South 89° 58' West a distance of approximately 546 feet from the Northeast section corner thereof; thence leaving Indian lands and entering a parcel of privately owned land, North 27° 39' East a distance of approximately 1,124.3 feet to a point lying on the Northerly property line of the aforesaid private parcel and which property line is further described as the southerly meander line of the Little Colorado River; thence leaving privately owned lands and entering Navajo Indian Reservation lands, North 27° 39' East a distance of 3,517.01 feet; thence North 0° 39' East a distance of 4,694.99 feet to a point lying on the south line of Shadow Substation, said point being hereinafter designated as POINT "C"; thence continuing North 0° 39' East a distance of approximately 8,243 feet; thence North 12° 06' 55" West a distance of 475.54 feet; thence North 6° 02' 25" East a distance of 1,135.98 feet; thence North 0° 39' East a distance of 17,322.03 feet to a point lying on the south line of Bear Springs Series Capacitor Bank, said point being hereinafter designated as POINT "D"; thence continuing North 0° 39' East a distance of 9,745 feet; thence North 30° 59' East a distance of 8,250 feet; thence North 56° 17' East a distance of 13,550 feet; thence North 42° 17' East a distance of 17,911 feet; thence North 30° 01' East a distance of 7,182.5 feet to a point lying on the south line of Tonalea Substation, said point being hereinafter designated as POINT "E"; thence continuing North 30° 01' East a distance of 2,044.5 feet; thence North 53° 31' East a distance of 4,360.4 feet; thence North 81° 24' East a distance of 9,882.2 feet; thence North 25° 40' East a distance of 63.46 feet to a point lying within the Southwest quarter of Section 32, Township 32 North, Range 11 East, which point lies on the southerly boundary of the Navajo-Tuba City Administrative Area; thence continuing North 25° 40' East a distance of 3,342.54 feet; thence North 34° 38' West a distance of 484 feet to a point

lying on the south line of Tuba City Substation, said point being the POINT OF TERMINATION of the 69kV transmission line right of way legal description.

**SUBSTATION LEGAL DESCRIPTION OF RIGHT OF WAY**

A 40-foot-by-40-foot parcel of land lying within Section 32, Township 28 North, Range 9 East, Gila and Salt River Meridian, more particularly described as follows:

**BLACK MESA SUBSTATION**

BEGINNING at the above designated POINT "A"; thence North  $74^{\circ} 54'$  West a distance of 20 feet; thence North  $15^{\circ} 06'$  East a distance of 40 feet; thence South  $74^{\circ} 54'$  East a distance of 40 feet; thence South  $15^{\circ} 06'$  West a distance of 40 feet; thence North  $74^{\circ} 54'$  West a distance of 20 feet to the POINT OF BEGINNING.

A 50-foot-by-60-foot parcel of land lying within Section 27, Township 29 North, Range 9 East, Gila and Salt River Meridian, more particularly described as follows:

**CAMERON SUBSTATION**

BEGINNING at the above-designated POINT "B"; thence North  $62^{\circ} 21'$  West a distance of 60 feet; thence North  $27^{\circ} 39'$  East a distance of 50 feet; thence South  $62^{\circ} 21'$  East a distance of 60 feet; thence South  $27^{\circ} 39'$  West a distance of 50 feet to the POINT OF BEGINNING.

A 15-foot-by-22-foot parcel of land lying within Section 14, Township 29 North, Range 9 East, Gila and Salt River Meridian, more particularly described as follows:

**SHADOW SUBSTATION**

BEGINNING at the above-designated POINT "C"; thence North  $89^{\circ} 21'$  West a distance of 7.5 feet; thence North  $0^{\circ} 39'$  East a distance of 22 feet; thence South  $89^{\circ} 21'$  East a distance of 15 feet; thence South  $0^{\circ} 39'$  West a distance of 22 feet; thence North  $89^{\circ} 21'$  West a distance of 7.5 feet to the POINT OF BEGINNING.

A 75-foot-by-200-foot parcel of land lying within unsurveyed Section 23, Township 30 North, Range 9 East, Gila and Salt River Meridian, more particularly described as follows:

**BEAR SPRINGS SERIES CAPACITOR BANK**

BEGINNING at the above-designated POINT "D"; thence North  $89^{\circ} 21'$  West a distance of 5 feet; thence North  $0^{\circ} 39'$  East a distance of 150 feet; thence South  $89^{\circ} 21'$  East a distance of 75 feet; thence South  $0^{\circ} 39'$  West a distance of 150 feet; thence North  $89^{\circ} 21'$  West a distance of 70 feet to the POINT OF BEGINNING.

A 15-foot-by-22-foot parcel of land lying within unsurveyed Section 2, Township 31 North, Range 10 East, Gila and Salt River Meridian, more particularly described as follows:

**TONALEA SUBSTATION**

BEGINNING at the above-designated POINT "E"; thence North  $59^{\circ} 59'$  West a distance of 19 feet; thence North  $30^{\circ} 01'$  East a distance of 15 feet; thence South  $59^{\circ} 59'$  East a distance of 22 feet; thence South  $30^{\circ} 01'$  West a distance of 15 feet; thence North  $59^{\circ} 59'$  West a distance of 3 feet to the POINT OF BEGINNING.

A 100-foot-by-100-foot parcel of land lying within Section 32, Township 32 North, Range 11 East, Gila and Salt River Meridian, more particularly described as follows:

**TUBA CITY SUBSTATION**

BEGINNING at the above-designated POINT "F"; thence South  $25^{\circ} 22'$  West a distance of 50 feet; thence North  $34^{\circ} 38'$  West a distance of 100 feet; thence North  $25^{\circ} 22'$  East a distance of 100 feet; thence South  $34^{\circ} 38'$  East a distance of 100 feet; thence South  $25^{\circ} 22'$  West a distance of 50 feet to the POINT OF BEGINNING.

TRANSMISSION LINE RIGHT OF WAY

	<u>Feet</u>	<u>Acres</u>
Navajo Indian Reservation 1934 Boundary Bill Area	120,010.30	55.10
Navajo Tuba City Administrative Area	3,826.54	1.76
Navajo Tribal Trust Lands (Checkerboard)	33,452.38	15.36
Private Lands, Cameron Area	1,124.30	0.52

SUBSTATION RIGHT OF WAY

	<u>Substation</u>	<u>Acres</u>
Navajo Indian Reservation 1934 Boundary Bill Area	Black Mesa Substation	0.037
	Shadow Substation	0.008
	Bear Springs Series Capacitor Bank	0.344
	Tonalea Substation	<u>0.008</u>
	<i>Subtotal</i>	0.397
Navajo Tuba City Administrative Area	Tuba City Substation	0.300
Navajo Tribal Trust Lands (Checkerboard)	Cameron Substation	<u>0.069</u>
	<i>Total</i>	<u>0.766</u>



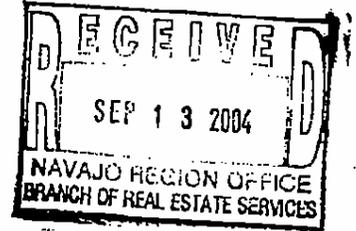
A subsidiary of Pinnacle West Capital Corporation

Name Wayne M. Darby  
Title Senior Land Agent  
Department Land Services

Tel. 602-371-6971  
Fax 602-371-6586  
e-mail [wdarby@apsc.com](mailto:wdarby@apsc.com)

Mail Station 3016  
PO Box 53933  
Phoenix, Arizona 85072-3833

September 7, 2004



Bureau of Indian Affairs  
Navajo Region  
Division of Real Estate  
P.O. Box 1060  
Gallup, NM 87305-1060

Attn: Steve Graham  
Realty Officer

**Re: Application for Right of Way  
Tuba City 69kV Electric System**

Enclosed you will find a copy of Arizona Public Service Company's (APS) previously submitted application for right of way covering its Tuba City 69kV electric system as last submitted on February 5, 1996. The initial 25-year term expired on April 5, 1981 and APS has attempted a number of times to renew its grant of right of way, as evidenced by the sequence of events listed below.

APS is hereby requesting that the current application be approved and is further requesting that an additional 25-year right of way term be granted. Because this is a radial feed system (the line terminates in the Tuba City area and does not continue on to feed others) we feel that the system provides a direct benefit to the Navajo Nation and, as such, are requesting that any fees associated with the granting of this right of way be waived.

Please note that this represents the fifth submittal of APS' application for renewal for this right of way. A brief history is as follows:

- 3/1/56 - Agreement entered into between the BIA and APS to extend electric service to Rare Metal Corp. at Tuba City.
- 4/6/56 - BIA approves original Grant of Right of Way to APS.
- 3/23/81 - Original application for renewal of right of way submitted to Director - Navajo Area Office - BIA.
- 7/1/82 - Revised application with additional information incorporating "partitioning of lands" submitted as requested to Area Director.



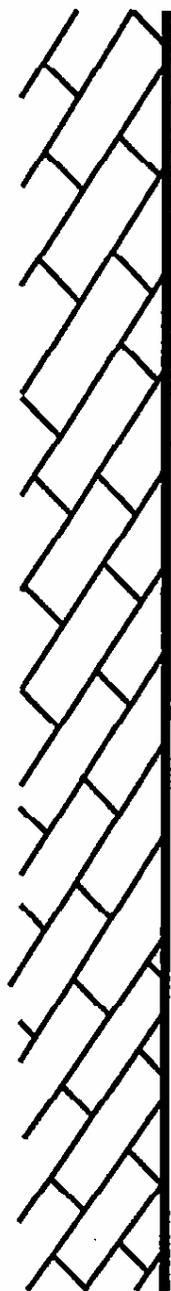
- 7/17/90 - Application for renewal of right of way resubmitted to Area Director.
- 2/5/96 - Revised application for renewal of right of way depicting substations, etc. submitted to Area Director.
- 9/7/04 - Latest resubmittal of application for renewal of right of way submitted with this letter.

Although we have provided you with the documents referenced above in the past, we would be pleased to provide copies again should you require them. Your consideration of this request is greatly appreciated. Should you or your staff have any questions or comments, please do not hesitate to call me at (602) 371-6971.

Sincerely,

*Wayne Darby*

Wayne Darby  
Senior Land Agent



**American Indian and Alaska Native  
Mental Health Research**

The Journal of the National Center

**Volume 11, Number 1, 2003**

**EXHIBIT**  
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**American Indian and Alaska Native  
Mental Health Research**

The Journal of the National Center  
Volume 11, Number 1, 2003

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**PSYCHOLOGICAL EFFECTS OF TECHNOLOGICAL/HUMAN-CAUSED  
ENVIRONMENTAL DISASTERS: EXAMINATION OF THE NAVAJO AND  
URANIUM**

Carol A. Markstrom, Ph.D. and Perry H. Charley

*Abstract: Disasters can be defined as catastrophic events that challenge the normal range of human coping ability. The technological/human-caused disaster, a classification of interest in this article, is attributable to human error or misjudgment. Lower socioeconomic status and race intersect in the heightened risk for technological/human-caused disasters among people of color. The experience of the Navajo with the uranium industry is argued to specifically be this type of a disaster with associated long-standing psychological impacts. The history of the Navajo with uranium mining and milling is reviewed with a discussion of the arduous efforts for compensation. The psychological impacts of this long-standing disaster among the Navajo are organized around major themes of: (a) human losses and bereavement, (b) environmental losses and contamination, (c) feelings of betrayal by government and mining and milling companies, (d) fears about current and future effects, (e) prolonged duration of psychological effects, (f) anxiety and depression, and (g) complicating factors of poverty and racism. The paper concludes with suggestions for culturally-appropriate education and intervention.*

There has been a proliferation of articles about disasters in the psychological and psychiatric literatures in recent years. Less apparent in these literatures is that certain groups are at greater risk for victimization by technological/human-caused disasters. In the intersection of socioeconomic status (SES) and race, people of color are especially vulnerable to contaminating conditions that compromise health and well-being (Bullard, 1993). The term environmental racism is applied to this phenomenon. Long-standing discriminatory practices that have suppressed the power of

marginalized groups in society, limit the ability of these groups to prevent potentially dangerous technological practices from occurring within their domains. The same discriminatory conditions that led to such vulnerability contribute to restricted access to appropriate physical and mental health care to deal with the aftermath of technological/human-caused disasters.

To delve into these issues more fully and to illustrate the effects of a technological/human-caused environmental disaster on a group in society subjected to historical racism, the experience of the Navajo with uranium mining and milling is discussed utilizing existing literature as a basis. According to 2000 Census data, 269,202 individuals identify as solely Navajo (U.S. Department of Commerce, 2002), and approximately two-thirds of that number reside on the Navajo Nation (U.S. Census Bureau, 2000a). The Navajo reservation is located in the Four Corners region of the U.S. and encompasses 24,096 square miles in New Mexico, Arizona, and Utah including off-reservation trust land (U.S. Census Bureau, 2000a).

This article begins with various conceptualizations of disasters with special emphasis on the technological/human-caused classification. The common psychological effects of disasters are briefly reviewed. To fully portray the experience of the Navajo, a summary of the history of uranium mining and milling on and around the Navajo Nation is presented. The strenuous efforts for compensation are reviewed because they have been a major source of stress for families. The nature of this disaster is discussed according to impacts on the way of life and psychological well being of the Navajo people. The article concludes with suggestions for culturally appropriate healing and recovery measures.

### **Conceptualizations of Disasters**

Disasters can be conceptualized on a continuum of deliberateness from "natural" on one end to "purposely perpetrated" on the other end with the "technological/human-caused" classification between the two ends (Green, 1996). A natural disaster occurs outside of the realm of human control, for example, a hurricane or a tornado. A technological or human-caused disaster is attributable to human error or misjudgment—the intent is not to cause disease, death, or disruption of lives. In contrast, a purposely-perpetuated disaster is caused by a perpetrator(s) with the specific intent of human destruction (e.g., September 11 tragedy). The technological/human-caused classification is somewhat problematic because victims may experience a mixture of benefits with adverse side effects. For instance, the introduction of an industry may provide employment and much needed income to depressed local economies, but such advantages are diminished by potentially hazardous working conditions and environmental contamination. This issue certainly pertained to the Navajo in respect to uranium and is discussed more fully in a later section.

Sturgeon (1993) stated that, "the common theme of disasters is that they are so catastrophic and overwhelming that they go beyond anything that individuals involved with normally have to cope with. As a result, their psychological capacity to function is stretched beyond the limits of endurance" (p. 421). What is known about disasters, in general, is that adverse psychological outcomes can be predicted from them (McFarlane, 1995). The most damaging effects of disasters can be the psychological scars of the trauma, most evident in diminished sense of safety and impaired social relations (McFarlane, 1995). Adverse psychological outcomes of disasters include anxiety, depression, somatic complaints, and relationship problems (Green & Lindy, 1994), substance abuse (Fullerton & Ursano, 1997), and negative affect such as increased levels of anger, alienation, mistrust of others, loneliness, and isolation (Jerusalem, Kaniasty, Lehman, Ritter, & Turnbull, 1995).

Posttraumatic stress disorder (PTSD) is a common diagnosis in respect to disasters and frequently occurs in conjunction with other disorders, such as anxiety and depression (Green & Lindy, 1994). Gender differences are apparent with PTSD. Women are more likely to experience anxiety and depression. Alternatively, men are more apt to experience alcohol abuse, physical or somatic complaints, and symptoms of hostility or acting-out (Green, 1996; Green & Lindy, 1994). A threat to one's survival is at the core of PTSD—whether it be a threat to oneself, family, or friends, or home, or even learning about serious injury or harm to a significant other(s) (Fullerton & Ursano, 1997; McCarroll, Ursano, & Fullerton, 1997). According to DSM-IV-TR (American Psychiatric Association, 2000), diagnosis of PTSD is made when there has been: (a) a traumatic event, (b) a re-experience of the event, (c) avoidance of stimuli associated with the trauma, (d) increased arousal, (e) duration of symptoms more than one month, and (f) impairment in social, occupational, or some other form of functioning. The severity, nature, and duration of the disaster or trauma are the best predictors of PTSD. As will be shown, all are relevant to the Navajo in their experience with uranium mining and milling.

Effects of PTSD can be acute or chronic, and chronic effects have been shown to endure for decades. For instance, with respect to the Buffalo Creek dam disaster in West Virginia, Green (1995) found symptoms of PTSD still evident 14 years later and Honig, Grace, Lindy, Newman, and Titchener (1999) reported symptoms of PTSD 20 years later among those who were children and adolescents at the time of the dam break. Many POWs from the Korean conflict were still diagnosed with PTSD after nearly half a century (Page, Engdahl, & Eberly, 1997). Additionally, an association has been found between PTSD and long-term serious physical health outcomes among victims of severe environmental stress (Boscarino, 1997). It has been suggested that with technological/human-caused disasters, some of the survivors may not return to normal levels of psychological functioning for a long period of time or at all (Green, 1996; Green & Lindy, 1994; Honig et al., 1999). Long

duration of psychological effects certainly applied to the case of Navajo victims of the uranium disaster and is one area addressed. Before this and related aspects of the uranium disaster are summarized, the historical context of the uranium industry among the Navajo is reviewed.

### **Overview of the Navajo and Uranium**

#### **History of Mining in Four Corners Area**

The escalation of uranium mining during the Cold War in the Four Corners region of the United States was motivated by the need for atomic weaponry (U.S. Department of Energy, 1995). Although the intent was not to disrupt life among the Navajo, other Natives, and non-Natives, this occurred nonetheless. The story begins with the discovery of carnotite deposits in 1918 by John Wade, an Anglo trader from Sweetwater, Arizona (Eichstaedt, 1994). Carnotite is a mineral that contains both uranium and vanadium and is located in the northern and western Carrizo Mountains of the Four Corners area of the Navajo Nation.

In 1992, when Niels Bohr of Denmark received the Nobel Prize for his work in changing the world's picture of the atom, the potential of this massive power was unrealized. In January 1939, Bohr came to the United States with the news that German scientists were experimenting with the properties of the heavy element uranium, believing it retained fissionable properties. Within days, the government confirmed the information and worked to develop nuclear fission and a practical way to produce nuclear power before the Third Reich could do so (Hawkhill Associates, Inc., 1990).

Mining for uranium commenced in 1948 as a result of the Atomic Energy Commission's (AEC) uranium procurement program. Between 1948 and 1966, some 60 properties (at its height, 103 properties) were mined in the Carrizo Mountains (Chenoweth, 1985). Mining activities were begun in several other areas of the Navajo Nation (Chenoweth & Mallen, 1960). To process the ore from these properties, four mills were built on the Navajo Nation (see Table 1 and Figure 1).

#### **Conditions in Mines/Mills**

The Office of the Navajo Uranium Workers (T. Martinez, personal communication, August, 2001) maintains data on the number of Navajo people who worked in the uranium industry. Their records registered 2,200 Navajo miners and 400 millers. The actual numbers of Navajo miners and millers may be as high as 3,000 and 1,000, respectively, as estimated in Dawson and Madsen (1995). Work in the underground mines was very hazardous, primitive, and labor intensive (Churchill & LaDuke, 1992; Eichstaedt, 1994).

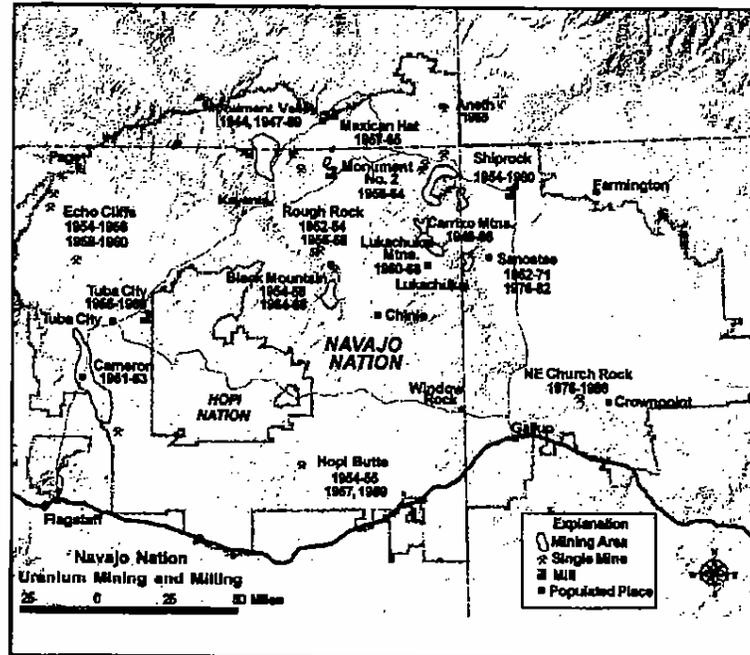
Table 1  
Extent of Uranium Mining and Milling on Navajo Nation

Location	Dates	Mines Number of Properties
Carrizo Mountains	1948-1966	103
Lukachukai Mountains	1950-1968	53
Sanostee	1952-1970	16
Monument Valley	1942-1969	37
Black Mesa	1954-1968	15
Cameron	1950-1963	100
Bidahochi	1954-1959	1

Location	Dates	Mills Companies
Tuba City	1956-1966	Rare Metals Corporation of America
	1962-1966	Rare Metals merged with El Paso Natural Gas
Shiprock	1954-1963	Kerr McGee Oil Industry, Inc.
	1963-1968	Vanadium Corporation of America (VCA) and Foote Mineral Company (successor to VCA)
Mexcan Hat	1957-1963	Texas-Zinc Mineral Corporation
	1963-1965	Atlas Corporation
Monument Valley	1955-1968	VCA and Foote Mineral Company

Proper protective clothing and safety measures were not provided nor enforced. Ventilation to control fugitive dust and radon progenies were non-existent. It was common practice to force the workers back into the mines immediately after blasting activities, subjecting the Navajo miners to heavy dust, smoke, radon activity, and unstable rocks from the ceilings. Complaints resulted in firing of individuals. Accident rates were high, frequently resulting in loss of hearing, vision, and/or limbs. Miners carried their lunches into the mines and ate in the mines, as well as drank the water that dripped from the walls and ceilings of the underground mines (Eichstaedt, 1994).

Figure 1  
Abandoned Uranium Mines Project: Arizona, New Mexico, Utah—Navajo Lands  
U.S. Army Corps of Engineers and U.S. Environmental Protection Agency



The following statement from Joe Ray Harvey<sup>1</sup> as quoted in Brugge, Benally, Harrison, Austin-Garrison, and Fasthorse-Begay (1997) illustrated some of these conditions:

When I first began to work, I worked for Kerr-McGee. Yes, it was like that, no air (ventilation); there was a lack of air when we worked. There was just lots of smoke and a powder smell after the blasting... The ventilation tubes did not go into the areas where we worked. (p. 38)

Milling activities were not any different or safer. Millers were subject to radioactive dust from the crushing operations and to sulfuric acids, sodium chlorate, and solvents from the leaching and extraction operations. Personal protective equipment was not used or readily available. The nature of the

conditions are illustrated in the following statements by informants from Dawson and Madsen's (1995) case study of American Indian mill workers:

It was messy and disorganized. It was also very dusty. I had an instant headache while working there. Also much coughing. In the first four years, they didn't provide masks. I breathed much dust and even coughed up the dust. I also had it in my eyes, and it irritated my eyes. I also had sores on my feet. It was hot and I had to wear an acid protector suit. Yellowcake would get into the suit. (p. 23)

The whole building was enclosed. Very stuffy. Can smell the boiling acid and ammonia. We had to handle this stuff (yellowcake) with our bare hands. When I worked in the yellowcake, I only wore a respirator. The dust was there all the time, especially when the yellowcake was being barreled. Now I see those who worked in the nuclear area wear special clothing, but we didn't. (pp. 23-24)

#### **Effects on the Health of Uranium Workers**

Uranium workers were exposed to high external radiation, radon gas, and high silica dust containing an underdetermined amount of radiation. RaA and RaC are two energetic alpha emitters of radon gas that interact with and damage body cells. They can be inhaled or transported through water droplets that are ingested. Daughters of radon will decay in the lungs, likewise emitting alpha particles besides gamma and beta. The amount of this dust-borne radioactivity present in mine atmosphere depends on ventilation, air turbulence, and other factors (Eichstaedt, 1994).

The absence of protective measures resulted in high levels of exposure to radioactivity in miners and millers. Summarizing data from the National Institute of Occupational Safety and Health (NIOSH), Eichstaedt (1994) reported that uranium miners were five times more likely to develop lung cancer than the general population. Indeed, more than 75% cases of lung cancer among Navajo males were found in the miners (Gottlieb & Husen, 1982), and Navajo people have a low incidence of smoking (Dawson, Madsen, & Spykerman, 1997; Gilliland, Hunt, Pardilla, & Key, 2000; Mulloy, James, Mohs, & Kornfeld, 2001). In summarizing several studies, Mulloy et al. (2001) concluded that, "exposure to dust, gases, exhaust, and fumes can result in nonmalignant or malignant respiratory disease in underground miners" (p. 306). In addition to lung cancer, other respiratory diseases included silicosis, pulmonary fibrosis, emphysema, obstructive lung disease, silico-tuberculosis, and pneumoconiosis (Mulloy et al., 2001).

At the onset of uranium mining in the 1940s, many of the hazardous human consequences of uranium were known, but the tendency of the U.S. government was to minimize the relevance of the European studies to mining in the U.S. (Robinson, 1998). Further, no government agency assumed responsibility to establish and enforce mine safety regulations (U.S. Department of Energy, 1995). In August, 1949, the Public Health Service (PHS), under the U.S. Surgeon General, undertook the first study of miners and made a fateful decision. It was determined that individual miners would not be told of potential hazards from radiation in the mines for fear of causing alarm (U.S. Department of Energy, 1995). Instead of warning the miners, an exculpatory "study" of radiation effects on uranium miners was undertaken in which causal relations were confirmed between cumulative airborne radiation exposure and risk of respiratory cancer. Eventually these findings contributed to the development of protective legislation for miners and millers (PL-91-596, PL-91-173, and PL-95-164) (Lundin, Wagner, Hyg, & Archer, 1971; National Institute of Occupational Safety and Health, 1987). However, for the many Navajo people previously involved in the uranium industry, these protections came too late. The U.S. government had a trust obligation (Snyder Act of 1921) to Native Americans that included relief of stress and conservation of health. These basic principals were violated through the failure to inform Navajo and other American Indians of the hazardous working conditions in uranium mines and mills.

#### **Legal Efforts for Compensation**

In the early 1960s, efforts were initiated from Red Valley and Cove, Arizona to obtain compensation for families of deceased uranium miners who had died of lung cancer and other respiratory diseases. The first attempt to compensate uranium miners was in 1973, by the late Senator Joseph M. Montoya (D., NM) (Eichstaedt, 1994). For the next twenty years, until October 1990, numerous efforts were taken by congressional leaders to enact legislation to compensate uranium miners, millers, and surviving family members. In September 1979, Stewart L. Udall, former Secretary of the Interior and a former Arizona Congressman (D.), filed 185 claims against the U.S. government. Udall's lawsuit started a long legal battle through the courts.

A key factor of the government's counterargument was that the government was exempt from blame because it had exercised its "discretionary function" according to the Federal Torts Claims Act. The discretionary function used by the government allowed it to make certain decisions to carry out programs despite possible health risks and consequences. In the appeals process, the courts chose to interpret the exception for the benefit of the government (Eichstaedt, 1994). During its October, 1987 term, the U.S. Supreme Court upheld the earlier lower courts'

decision on behalf of the government, but added that remedy was warranted and that Congress was the appropriate source.

With this, efforts for compensation were renewed. After three more years of congressional hearings and the initiation of several additional legislative bills, on October 15, 1990, President George Bush signed into law H.R.2372, entitled the Radiation Exposure Compensation Act of 1990 (RECA), Public Law 101-426. Shortly after its passage, claimants realized that RECA had some serious flaws. The RECA administrator, the U.S. Department of Justice, refused to recognize traditional customs that may not have been recorded on state records, such as validation of marriages, use of ceremonial tobacco, use of original documents to support work history and medical conditions, and similar requirements. These shortcomings eventually led to RECA's revision in 2000. After another setback, due to bankrupt RECA funds and subsequent issuance of IOUs by the Federal Government, in July 2001 the U.S. Senate approved a spending bill that included \$84 million to pay the IOUs and President George W. Bush's signature followed. Further amendments occurred November 2, 2002 with President Bush's signing of the Justice Department's FY2002 Authorization bill. Prior to this amendment, uranium miners were required to prove exposure to at least 40 working levels (WLs) of radiation, while uranium millers and ore transporters were required to demonstrate employment in a mill or as an ore transporter for one full year. With the amendment, uranium miners can qualify for benefits by meeting either the 40 WL exposure standard or the one-year employment standard. The road to compensation continues to be rocky for many claimants, however. The U.S. General Accounting Office reported on April 15, 2003 that the RECA program is expected to run short of funding during the years 2003 through 2007 due to an increase in the number of claimants in the wake of revisions to RECA. Delays in compensation are anticipated. The uranium issue continues to be at the forefront of consciousness among Navajos. Grassroots groups are sending a message of *leetso dóodá* (no uranium mining in Navajo Country), and are actively engaged in initiatives to educate and inform the public, as well as lobby at Navajo Nation, state, and federal levels of government.

#### **Psychological Consequences of Uranium Disaster**

Due to the unintentional, but damaging environmental and health impacts of uranium mining and milling among the Navajo people, we classify it as a technological/human-caused environmental disaster. The psychological impacts of this kind of disaster can be more serious than natural disasters (Green, 1996). Natural disasters are clearly evident to all people and, in response, an "altruistic or therapeutic community" emerges to help cope with the aftermath (Jerusalem et al., 1995). Such a benefit was not available to the Navajo. The following themes of the uranium disaster give insight to the psychological repercussions: (a) human losses and bereavement, (b)

environmental losses and contamination, (c) feelings of betrayal by government and mining and milling companies, (d) fear about current and future effects, (e) prolonged duration of psychological effects, (f) anxiety and depression, and (g) psychological impacts and exacerbating conditions of poverty and minority status.

#### **Human Losses and Bereavement**

Mortality risk of Navajo uranium miners was examined according to vital statistics from the years 1960 to 1990 (Roscoe, Deddens, Salvan, & Schnorr, 1995). In examination of data from 303 of 757 miners that had died, elevated risk of mortality due to uranium-linked diseases of lung cancer, pneumoconiosis, and other respiratory diseases was reported. The loss of life among the Navajo had a profound impact as illustrated in the following quote by Joe Ray Harvey as he speaks of the Cove Community's shared experience of grief (Brugge et al., 1997):

There is a general sickness today, with all people. There are no elderly men in Cove because they were mostly miners and have died, but there are many widows. No men! People are still suffering today, especially the widows. (p. 54)

Loss of a family member, while stressful and emotionally painful, is a normal experience. However, when loss is compounded by exacerbating circumstances of disasters, bereavement can become traumatic. Trauma and loss are treated as two separate entities, but certainly can overlap in cases of disaster and form traumatic bereavement (Raphael & Martinek, 1997). Not only must individuals deal with the trauma, but also are engaged in the grieving process. Hence, traumatic bereavement is characterized by an ongoing preoccupation with the traumatic experience accompanied by an inability to progress through the grief process (Raphael & Martinek, 1997). The risk for traumatic bereavement among victims of the uranium disaster may be intensified by: (a) the degree of suffering of the ill family member, (b) the premature nature of the death, (c) the knowledge that the death was due to preventable, human-caused circumstances, (d) the reluctance of any social entity to take responsibility for the disaster, (e) the number of other people in the community affected by uranium mining/milling, and (f) the reduction in household income due to illness or death of the breadwinner.

#### **Environmental Losses and Contamination**

Environmental losses are called secondary losses, because they are widespread and affect all members of the community, whether or not they worked in the uranium mines and mills. Such secondary losses increase the number of victims of disasters and deplete much needed coping resources

and social support (Jerusalem et al., 1995). The hundreds of abandoned uranium mines and four inactive uranium mills on the Navajo Nation evidence the gravity of the environmental devastation. These sites continue to degrade the local environment, contaminating soil, plant life, and water, as well as the livestock that depend on clean food and water sources. Radioactive mine waste and protore were left to cause further dispersion of contaminants. In 1989 and 1990, the Navajo Abandoned Mine Lands (AML) Reclamation Department documented and prioritized 1,150 abandoned and un-reclaimed uranium mines according to their degree of physical and radiological hazards.

For the Navajo, their lifestyles, traditions, and cultural practices demand a positive interaction with the forces of nature. That is, to be in harmony and balance with one's self and with nature. In this sense, a primary goal of the Navajo is to "walk in harmony" (*hózhó násháádóó*). This critical tie with the environment was severely disrupted from the advent of past mining practices. For instance, areas once used to gather herbs for ceremonial and medicinal properties were impacted. Areas considered sacred and linked to explicit oral traditions became desecrated from contamination.

The Navajo peoples' spiritual tie to the land overlaps with basic subsistence functions. The land provides water and vegetation for animals, and humans consume the animals, vegetation, and water. The pattern is apparent—environmental contamination has multiple routes to enter into the biological realms of humans. The Navajo expressed concerns on all of these accounts (Woody, Jack, & Bizahaloni, 1981). Consider the following observations by impacted Navajo informants (Brugge et al., 1997):

Anna Aloyslous: To this day low radiation is spreading its disease among us. They had piled up uranium ore beside the road that they never took care of completely when they left. They really did nothing in that way. They thought of us Navajos as nothing. That's how I think about it and it really hurts my heart and mind. (p. 28)

Dan N. Benally: It is true that waste was dumped off the hillsides and the water carried it into the main washes. Meat from these animals is consumed, and contamination continues to affect humans. Forty-three of the people I worked with have died now. Some time ago, I counted this. There are just a few of us still around. (p. 26)

Physical contamination also occurred through the use of open mines for livestock pens and shelter. Radioactive stones and protore obtained from abandoned mines were used for construction of homes and other domestic purposes. A recent U.S. EPA survey of water quality on unregulated water sources used for livestock and domestic usage indicated anomalous

contamination from arsenic, lead, and total uranium. Of great concern was the 1979 flashflood from the rupture of the United Nuclear Corporations (UNC) Church Rock, NM dam that sent radioactive water from a tailings pond down the Rio Puerco. The most severely affected were 1,700 people, mostly Navajo. Children were playing in the contaminated water and, later, only a small segment of the population was tested for thorium, a major contaminant from the spill (Woody et al., 1981). This incident was the largest nuclear accident in the United States, but certainly not as well publicized as the Three Mile Island incident (Grinde & Johansen, 1995).

The psychological impacts associated with environmental losses can be significant. For instance, it was noted that subsequent to the Exxon Valdez oil spill, Native people had higher rates of major depression, generalized anxiety, and PTSD than non-Native people (Manson, 1997). Native people subsisted on game, fish, plants, and berries that were destroyed or damaged by the spill. Similarly, the Navajo are afraid of what effects may occur from the water they drink and the animals they consume. As summarized in Woody et al. (1981):

The residents (of the Church Rock community) accused the companies of dwelling in 'money, money, money' while they live in fear and are faced with questions. Where to get the next water? How to get it? Where to graze the sheep? Whether their children should work for the company? Whether they are breathing radiation and who to ask for help? (pp. 82-83)

In short, lifestyles have changed due to fears of the radiation effects in farming and ranching, and it has been necessary to move herds to less desirable grazing locations.

#### **Feelings of Betrayal By Government and Mining and Milling Companies**

In addition to significant and multiple losses experienced by the Navajo impacted by the uranium disaster, feelings of betrayal occurred because it was known that the adverse impacts were human-caused and preventable. As stated by Jerusalem et al. (1995), "community stressors are rarely caused by the very individuals who are forced to cope with them" (p. 117). Certainly there were employment and income benefits of uranium mining and milling for the Navajo Nation. However, workers were not informed of the potential for loss of life and environmental contamination. Dawson (1992) reported that a feeling of being betrayed by their employers was a common response by Navajo informants. Woody et al. (1981) stated that people perceived they had been cheated, but did not know where to go for assistance. Negative affect can be intensified by the knowledge that a disaster could have been

prevented (Sturgeon, 1993). The following comments from Brugge et al. (1997) are revealing:

Mary Frank: They did not say it was harmful, they probably kept it a secret from us. Anglos kept that secret—with this I think. I am very concerned because I was left alone. (p. 46)

Frank Floyd: Are we disposable to the government? These are some of our thoughts this uranium brings out to the front... (p. 8)

Helen Johnson: The real sad thing about it was that they were never straight about what the hell this radiation was or would do to the health of these innocent people. White men (U.S. Government and mining companies) are not honest people. ... In the treaty of 1868 it mentioned that the Federal Government would protect the health of the Navajo people. Yet they didn't do so... (p. 36)

Betrayal also can be related to the lack of compensation from the companies and government, as described earlier and illustrated in this comment:

Paul Nakaidenae: All should be compensated, I think. We really suffered, so why is it that miners file claims and get no compensation? They have children who all are in need. (p. 27)

#### **Fear About Current and Future Effects**

There are some commonalities between the Chernobyl nuclear disaster and the uranium disaster. For victims of the Chernobyl disaster, there were three major concerns (Giel, 1998): (a) the effects of current radiation on health and whether or not current health problems were linked to the radioactivity in the environment, (b) the impact of radioactivity on the health of children, and (c) safety with respect to collecting plants in the forests, working with the land, and general food safety. In addition to current concerns of the Navajo about safety in air, water, soil, and livestock, there is anxiety about the uncertainty of and anticipation of health effects on oneself and family. The following quotes reflect these concerns (Brugge et al., 1997):

Greg Lapahe: Today our health is in jeopardy. My children are like that. They are experiencing difficulties health wise and are suffering. So, something called tumors are affecting them. Where are the diseases coming from? Uranium is the only culprit. (p. 20)

Minnie Tsosle: Three of my daughters are affected. They've been told that their uterus was affected. Two had their uterus removed. The other, they are still tracking her illness and she said the doctors are trying to blame the uranium. She was asked if her father worked in the uranium mines. (p. 50)

People's fear for their offspring may not be unfounded. A study conducted among the mining population in the Shiprock, New Mexico area demonstrated trends that lend limited support for the hypothesis of adverse genetic outcomes from radiation exposure (Shields, Wiese, Skipper, Charley, & Benally, 1992). Recent efforts have been initiated through the Saccomanno Research Institute (Grand Junction), Diné College (Shiprock Campus), the University of New Mexico Cancer Research Center, and Lovelace Research Center to conduct a more detailed DNA damage-ecological risk assessment. It is expected that what the Navajo people have feared will be empirically supported, that is, chromosomal-genetic damages have resulted from prolonged exposure to the uranium environmental hazards.

#### **Prolonged Duration of Psychological Effects**

The duration of the effects of the uranium disaster is significant because concern about the working conditions in the uranium mines were voiced as early as 1949 and the first cases of lung cancer were reported in the 1960s (Eichstaedt, 1994). In our estimation, there are four factors that keep the uranium disaster at the forefront for the Navajo people. First, efforts to obtain compensation by miners and millers and their families have been long-standing. Second, the environmental contamination and clean-up efforts have been seemingly endless with no assurance of resolution in the near future. Third, there is a great deal of uncertainty and ambiguity surrounding common concerns for the health and well being of the dependents of mine and mill workers. Fourth, there are recent efforts to resume uranium mining on Navajo trust land. Current technology and extraction methods are safer than in earlier days of uranium mining. However, based on past experiences, some people are alarmed by this prospect.

In short, the tragic aspects of this disaster have endured for four decades and have served to keep the issue alive in the hearts and minds of the Navajo. The continual reminders may serve to increase arousal and

diminish the potential for recovery. The fact that psychological disorders, such as PTSD, can endure for decades becomes especially meaningful in light of the set of circumstances just described.

#### **Anxiety and Depression**

Clearly, the uranium disaster heightened a state of transition already present in the lives of the Navajo due to broader influences from the U.S. culture that influenced changing lifestyles and values. The impacts from uranium mining and milling brought additional stress due to many of the factors previously described. Lifestyles were disrupted due to illness, loss of the primary income earner in the family, and environmental contamination that changed traditional styles of living. Changes increase stress that can lead to heightened risk for psychological disorders. However, the psychological impact of the uranium disaster has not been widely addressed in research or intervention. Of available reports, qualitative methodology was used that relied on self-report data obtained through interviews. Woody et al. (1981) examined two Navajo communities impacted by uranium mining. All respondents acknowledged deep psychological stress and despair due to trauma from the changes in their lives subsequent to their experiences with uranium. Anxiety was readily apparent throughout the comments made by respondents, and the authors' speculated that this anxiety contributed to a higher degree of alcoholism on the reservation. The most prevalent theme of Woody et al. (1981), as summarized in the following quote, was that stress was induced from change due to exposure to uranium:

The Navajo people are not opposed to change. However, there is often great stress related to change, especially when the people feel things have 'gotten out of control' and that they do not have control over their destiny. This seems to be the current situation in the communities on which this study was based. (p. 124)

In more recent work conducted by Dawson and Madsen (1995) among American Indian (including Navajo) uranium mill-workers, 39 of 81 respondents reported anxiety, depression, or both. These emotional responses were attributed to their own health problems, the health of other mill-workers, and the death of other mill-workers due to exposure to uranium.

#### **Exacerbating Conditions: Poverty and Racism**

It is imperative to recognize that the disastrous effects of uranium mining and milling are among many stressors experienced by the Navajo. When victims of technological/human caused disasters are already marginalized due to poverty and/or racism, the impacts are compounded.

Choney, Berryhill-Paapke, and Robbins (1995) observed that embedded in the American Psychiatric Association's description of PTSD is the consideration of threat to personal integrity. Certainly, insult to personal integrity of American Indians occurred through forced acculturation, racism, and discrimination. These and other experiences of persons from colonized groups are part of the ongoing process of historical trauma and result in a spiritual injury called "the soul wound" (Duran, Duran, & Brave Heart, 1998). Manson (1997) cited the greater experience of trauma by ethnically diverse persons, and attributed this occurrence to greater stress. In particular, the complex relationship between SES, ethnicity, PTSD, and substance abuse give some indication why some groups more than others have adverse outcomes from trauma (Manson, 1997). Poverty and discrimination due to ethnic minority status are ongoing stressors that become aggravated with additional trauma. In short, PTSD and substance abuse may not be linked to one single trigger, but are confounded through multiple stressors.

Poverty is the single most debilitating mental and physical health factor affecting individuals of any racial group, and its undesirable outcomes are well-documented in the literature (e.g., Dadds, 1995; McLoyd, 1998; Routh, 1994). In the U.S., disparities in SES according to race are readily apparent (Huston, 1994; McLoyd, 1998; Taylor, 1997), and the low SES of the Navajo is documented in various indices. According to the U.S. Census Bureau (2000b), 40.8% of families with related children under the age of 18 lived below the poverty line compared to 13.6% for the nation (U.S. Census Bureau, 2000c). The Navajo median household income was \$21,136 compared to the U.S. average of \$41,994 (U.S. Census Bureau, 2000b, 2000c, respectively). Associated with lower income, is the high unemployment rate of 58% among the Navajo, according to the Bureau of Indian Affairs (BIA) (1997) Labor Force Report of Navajo people living on or around the reservation and considered part of the BIA Indian Service Population.

In addition to the stress associated with lower SES, the experience of racism due to inequality and restricted access to resources is a further aggravation that can lead to adverse health outcomes for ethnically diverse persons (Clark, Anderson, Clark, & Williams, 1999). Clark et al. (1999) argued that both psychological and physiological reactions to racism can lead to various adverse health outcomes, such as depression and susceptibility to physical illness.

As noted earlier, environmental racism is evident and, at a global level, traditional societies and third world countries have been more greatly affected by environmental disasters (deVries, 1995). In the U.S., there is evidence of greater risk of exposure to environmental toxins for ethnically diverse populations (Pellizzari, Perritt, & Clayton, 1999; Pirkle et al., 1998; Weintraub, 1997) and for those of lower SES (Bellinger & Matthews, 1998; Brody et al., 1994; Schmidt, 1999). More specific to the Navajo and other Native nations, Churchill and LaDuke (1992) used the term "radioactive colonialism" in reference to a new form of North American colonialism directed

toward technologically-oriented resource extraction on Indian reservations. The stimulus for this practice is the disproportionately higher amounts of uranium, oil, gas, coal, and important minerals that are located on reservations. The irony is that these lands were not known to be resource-rich at the time reservation lands were allotted to tribes. Indeed, in many cases, seemingly the least inhabitable lands were designated for reservations.

### **Culturally-Appropriate Intervention**

We have described the specific dynamics of a technological/human-caused disaster as it psychologically impacted the Navajo. The more pressing needs of the uranium disaster, namely, environmental cleanup and compensation, have played roles in psychological healing and recovery. However, more directed efforts toward emotional recovery are required. Three aspects of psychological intervention are addressed: (a) the role of education, (b) Diné (Navajo) conceptions of uranium, and (c) culturally-specific forms of healing.

### **Education to Promote Understanding and Reduce Stress**

Increased stress and other consequences of the uranium disaster reverberate through multiple levels of the individual, family, community, and environment. Jerusalem et al. (1995) offered a classification system for assessing community stress according to the degree of community awareness. Currently among the Navajo there is a high degree of community awareness concerning the impact of uranium mining along with community efforts to cope with the problem and its aftermath, especially with respect to the treatment of environmental contamination and compensation issues. Contamination has been, and continues to be, addressed by many organizations, such as the U.S. EPA, Navajo EPA, Navajo AML Reclamation, U.S. Army Corps of Engineers, U.S. Geological Survey, and U.S. Department of Energy.

The Uranium Education Program (UEP) at Diné College, supported by funding from the National Institute of Environmental Health Sciences and other agencies, has maintained a mission to inform people about and protect people from the risk and contamination still present in the environment. Efforts of the UEP have included: (a) helping teachers develop curricula on the subject; (b) developing and distributing educational materials on environmental impacts, including water safety; (c) holding public meetings at local chapter houses to inform and educate members of the Navajo Nation; (d) pursuing community-based risk assessments [DNA damage studies] and ecological risk assessments; (e) assisting U.S. EPA and Navajo EPA with issues of contaminated structures built with radioactive waste material from the nearby abandoned uranium mines; and (f) participating in activities related to abandoned mill sites and attempts to clean-up ground water contamination.

In considering education and intervention with any cultural group, language issues must be addressed. There has not been a Navajo vocabulary for terms such as uranium and radiological effects. For instance, at the time of the disastrous Church Rock, New Mexico dam break, many Navajo victims did not have a clear understanding of what occurred or of the possible dangers. Language barriers contributed to the lack of accurate information (Woody et al., 1981). More recently, the Uranium Education Program developed a Navajo-English glossary to describe the uranium phenomenon. Such an effort is essential to educate Navajo speakers on uranium (leetso) and how to protect oneself from radioactivity (bideezla'na'alkidgo).

Through proper education, unfounded fears can be dispelled and anxiety levels will subsequently be lowered. Yet, appropriate cautions for safety must be maintained. Education can be a tool in emotional recovery and healing efforts. As part of education and intervention, it is essential to understand the Diné conception of uranium. Specifically, the cultural meaning of a traumatic event may be the most critical aspect determining the impact of a disaster (McFarlane, 1995).

#### Diné Conception of Uranium

According to Navajo traditional teacher Frank Morgan (2001), the subject of uranium should be approached with an understanding of its place in the natural order and the properties it possesses. Uranium is a heavy yellow metal and has been regarded as the antithesis to the sacred corn pollen that is used to bless the lives of Navajo. The following oral interpretation of this distinction by an informant of Eichstaedt (1994) is quite revealing:

In one of the stories the Navajos tell about their origin, the Dineh (the people) emerged from the third world into the fourth and present world and were given a choice. They were told to choose between two yellow powders. One was yellow dust from the rocks, and the other was corn pollen. The Dineh chose corn pollen, and the gods nodded in assent. They also issued a warning. Having chosen the corn pollen, the Navajos were to leave the yellow dust in the ground. If it was ever removed, it would bring evil. (p. 47)

The Navajo view the *earth* according to four related elements of atmosphere, land, water, and sunlight/fire (Woody et al., 1981). The *earth* is viewed as the female counterpart of the male *sky*, and their relationship is reflected in the sphere of human existence. An ultimate goal of the Navajo is for balance and harmony between humans and nature (Csordas, 1999; Eichstaedt, 1994; Woody et al., 1981). Mining is regarded as a disruption in the balance of *earth* and *sky* and is disrespectful to the *earth* (Eichstaedt,

1994). It is believed that such a disturbance is the source of much stress experienced by the Navajo people that ultimately led to disease, death, and upheaval in their lives (Eichstaedt, 1994; Morgan, 2001; Woody et al., 1981). The fears and anxiety people hold in response to the uranium disaster are sometimes linked to their knowledge of the disruption of the earth's elements that are reflected in atmospheric conditions, such as contamination spread through the blowing wind (Woody et al., 1981). Sadly, some of the Navajo elders blamed themselves for disruption of earth and atmosphere by permitting the uranium mining to occur (Woody et al., 1981).

#### **Culturally-Specific Forms of Healing**

...counseling helped me to express a lot of my feelings, a lot of the grief that I was going through, and that is one of the reasons why I stress that a lot of counseling is needed in these areas.... the victims, I and others, are suffering out there. (p. 40)

The preceding quote by Kathlene Tsosie-Blackie (Brugge et al., 1997) illustrates the suffering of Navajo victims of the uranium disaster as well as a perceived need for intervention. It was observed by McFarlane (1995) that the cultural ascription of meaning to a disaster may be the strongest predictor of impact. It may follow, then, that the most effective coping strategies for dealing with disasters are culturally-specific. However, the risk for societies in transition is that, due to acculturation, traditional strategies for coping with trauma are lost (Chemtob, 1996). The extent to which this issue has influenced Navajo coping with the uranium disaster is unknown. What is known, however, is that the Navajo continue to maintain a regard for the sacred nature of the environment (Griffin-Pierce, 2000) and link their own psychological well being to environmental stability. Hence, the role of environmental restoration in psychological healing should not be underestimated.

Of paramount importance is to approach psychological healing from the impact of the uranium disaster with sensitivity. Communication patterns and various taboos of the Navajo play roles in discussions about death and in the expression of emotions. Cooper (1998) identified communication ethics of the Navajo according to respect, balance, containment, moderation, and reverence. There is great respect for thought and speech processes—responsibility and accountability are implicit in communication. Language is not to be wasted and, when something is spoken, it is regarded as important and meaningful. Pauses and silence in communication are comfortably permitted to allow the speaker the necessary time to prepare their thoughts. Containment, then, becomes a primary tenet of communication of Navajo communication because one does not share everything they know and they

think carefully before speaking their thoughts. A listener is never certain if the speaker has shared all they know or think on a topic.

Moderation and balance also are central principles of Navajo communication, as well as behavior. Hence, speech patterns are not excessive or sensational. The inhibition of strong emotion may lead to unwillingness to discuss the death of a loved one or of one's emotional distress. This is an additional factor that may contribute to the duration of psychological effects from the uranium disaster. Humor is acceptable and can be used to relieve tension and heaviness. Eye contact is avoided to not invade the privacy of others, and is not an evasive strategy.

Of all Navajo taboos, the one most relevant to the uranium disaster is to not speak about death or someone who has died because, by talking of the deceased, their ghost may be called and bring harm to the speaker (Kluckhohn & Leighton, 1948). Of interest, is that in its effort to be more culturally sensitive, the American Psychiatric Association (2000) now recognizes "ghost sickness" in its glossary of culture-bound syndromes. One may feel they are ill because of this ailment, which requires a traditional remedy.

A holistic view of healing dominates the belief system of many Navajo. The interaction between the four domains of spiritual, psychological, emotional, and physical existence are recognized, and harmony between these domains is desired. The spiritual domain permeates all facets of life and needs to be implicit in intervention efforts. Nonetheless, within-group diversity exists among the Navajo, and various belief systems operate in their lives. Csordas (1999) addressed three forms of spiritual or faith-based healing currently practiced among the Navajo: Traditional, Native American Church, and Christianity. All three forms are regarded as resources to the Navajo, and share a common goal that the individual acquire understanding of the philosophy that underlies the cause-and-effect nature of disease and healing. The healer must talk to the patient to facilitate such understanding. Explanations for the causes of illness may not follow western prescriptions of pathology and treatment, but are significant within the Navajo system of beliefs. A further commonality in the three forms of spiritual-based healing is the maintenance of a holistic view of interaction between spiritual and religious beliefs and other domains of existence (Griffin-Pierce, 2000).

The only Navajo indigenous form of healing is embedded in traditional beliefs. The person who adheres to the traditional belief system may have a better response when such a healer is involved (Choney et al., 1995; Manson, 1997). The ultimate goal in this healing is to restore a state of harmony, or *hózhó*, that was upset by violations of the natural order (e.g., mining). Identifying the nature of the obstacle in the patient's life is of prime importance. In delineating Witherspoon's (1997) distinction between blessing, curing, and purifying rituals used by Navajo, Cooper (1998) observed that cures serve to bring harmony between the patient and his or her environment (broadly defined) and bring healing in mental, physical, and environmental

domains. Cures rely on both thought and speech (including singing), which are thought to have powerful capacities for restoration (Cooper, 1998). In the process of healing, a diagnostician, also known as a hand trembler or crystal gazer, ascertains the nature of the illness and recommends a route for recovery. A singer will conduct a ceremony using chants and prayers to restore the patient to hózhó. Healing ceremonies may be several days in length and require elaborate rituals, such as sand paintings, singing, or chanting, and the use of holy objects (Conners & Donellan, 1998).

A second form of healing practiced among contemporary Navajo is the Native American Church, a pan-Indian movement that originated among Plains Indians around the turn of the previous century. The use of sacramental peyote and the sweat lodge are key tools in this approach. A philosophy of self-esteem predominates as the patient connects to the sacred through the use of peyote (Csordas, 1999). Christian faith healing represents the third form of healing and is found in both Protestant and Catholic faiths. In this approach the issue is one of moral identity and is based on a therapeutic principle of conversion. A unique form of Navajo Christianity has emerged led by Navajo pastors of independent congregations. Navajo people may overlap in their use of these three healing resources, especially the traditional practices and the Native American Church, but all three forms of healing are tools in emotional recovery.

#### Summary

In this article a specific technological/human-caused environmental disaster was detailed according to its history and the inter-related environmental and psychological impacts on the Navajo people. An attempt was made to understand this occurrence in light of Navajo culture and beliefs. While the experience of the Navajo with uranium was highlighted, the approach taken in this paper can be generalized to other groups in society. For example, chemical dumping and subsequent soil and water contamination has affected the traditional hunting, fishing, and agricultural ways of life of the Akwesasne Mohawks in both Canada and the U.S. (Grinde & Johansen, 1995). There is concern for health and way of life of the Inuit due to contamination of fish and marine life in the no longer pristine arctic. Psychological disorders are more common when people face significant changes in lifestyles and experience diminished feelings of safety and security. How people interpret the unsolicited changes are best understood in the complex of cultural beliefs, values, and practices. As well, steps for healing and recovery reside within these same cultural principles.

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#### **Author's Note**

Dedicated to the memory of Elouise R. "Wee-Zee" Charley. March 18, 1973 – December 19, 1997.

#### **Footnote**

<sup>1</sup>Brugge et al. (1997) specified that in reproducing from *Memories Come To Us in the Rain and the Wind* credit be given to the Navajo Uranium Miner Oral History and Photography Project and to the interviewees.

TRIBAL \_\_\_\_\_  
 INDIVIDUALLY OWNED XXXX  
 GOVERNMENT OWNED \_\_\_\_\_  
 RIGHT-OF-WAY IN-656  
 REFERENCE NO. W-A7-90-06

GRANT OF EASEMENT FOR RIGHT-OF-WAY

KNOW ALL MEN BY THESE PRESENTS:

The the United States of America for and on behalf of the Indian Owners of the lands described in Exhibit "A" hereof, acting by and through the Superintendent, Bureau of Indian Affairs, Department of the Interior, Tuba City, Arizona, hereinafter referred to as "Grantor", under authority contained in Secretarial Redlegation Order 209 DM 8 and 230 DM 3 and Navajo Area Addendum to 10 BIAM 3.3E., and pursuant to the provisions of the Act of February 5, 1948 (62 Stat. 17, 25 U.S.C. 55 323-328), and Part 169, Title 25, Code of Federal Regulations, in consideration of \$ Valved and other good and valuable consideration, the receipt of which is acknowledged, does hereby grant to ARIZONA PUBLIC SERVICE COMPANY, P. O. Box 53999, PHOENIX, ARIZONA 85072-3999

hereinafter referred to as "Grantee", and easement for right-of-way for the following purpose(s), namely: Construction, operation and maintenance of 12Kv electrical powerline extension to serve Mary Howard residence over, across, in and upon the following described lands located in the County of Coconino, State of Arizona.

The said easement, as shown on the Map ~~XXX~~ No. C-107952 consisting of one (1) sheet marked Exhibit "B" attached hereto, is limited to and

more particularly described as follows:

Description	Length/Feet	Width/Feet	Miles	Acres
Allotment 52 Powerline	944.17	15.00	0.17	0.32
Guy Easement	30.00	15.00	0.01	0.01
Allotment 54 Powerline	1,135.83	15.00	0.21	0.39
Guy Easement	80.00	15.00	0.02	0.03
TOTAL	2,190.00	-----	0.41	0.75

Said easement is more particularly described in the right-of-way description marked Exhibit "A" attached hereto which by this reference is made part hereof.

Said easement is also subject to "Navajo Area Land Clearing, Excavation and Reclamation Stipulations for Right-of-Way Over Indian Lands".



This easement is subject to any valid existing right or adverse claim and is ~~VOID~~  
~~VOID~~ for a term of fifty (50) years ending on June  
21, 2040 ), so long as said easement shall be actually used for the  
purpose above specified; PROVIDED, that this right-of-way shall be terminable in whole  
or in part by the Grantor for any of the following causes upon 30 days written notice  
and failure of the Grantee within said notice period to correct the basis for  
termination (25 CFR 169.20):

- A. Failure to comply with any term or condition of the grant or the applicable regulations.
- B. A nonuse of the right-of-way for a consecutive two-year period for the purpose for which it was granted.
- C. An abandonment of the right-of-way.
- D. Failure to the Grantee, upon the completion of construction, to file with the Grantor an affidavit of completion pursuant to 25 CFR 169.16.
- E. Failure to comply with the National Environmental Policy Act of 1966 and all amendments thereof.
- F.
- G.

The conditions of this easement shall extend to and be binding upon and shall inure to the benefit of the heirs, representatives, successors, and assigns of the Grantee.

IN WITNESS WHEREOF, Grantor has executed this grant of easement this

22nd day of June, 19 90.

UNITED STATES OF AMERICA

By *Arnold Adams*  
(Name)

Acting Superintendent  
(Title)

U. S. DEPARTMENT OF THE INTERIOR  
Bureau of Indian Affairs  
Western Navajo Agency  
P. O. Box 127  
Tuba City, Arizona 86045

NAVAJO AREA LAND CLEARING, EXCAVATION AND RECLAMATION  
STIPULATIONS FOR RIGHTS-OF-WAY OVER INDIAN LAND

1. Written Notification of Major Activity Status

Grantee will furnish written notification to the Agency Superintendent as follows:

  - a. A minimum of five (5) working days prior to commencement of construction, seeding and major soil-disturbing maintenance on the right-of-way.
  - b. A maximum of ten (10) working days following completion of construction, seeding and major maintenance.
2. Confinement of Activities to Right-of-Way

All vehicular traffic will be confined to existing roadway and/or within the right-of-way as granted, except as provided in Section 4 below or as specified by the Superintendent.
3. Line and Road Locations

Where possible, the utility will be constructed adjacent to the area cleared for an access road and/or other right-of-way.  
Other routes will be used, if necessary, to minimize visual impact as authorized by the Superintendent.
4. Roads Only Where Necessary

In areas where the right-of-way does not have permanent access, roads will not be constructed within the right-of-way when terrain will allow vehicles to maneuver without such roads.
5. Clearing and Grading

Clearing, grading and other soil and vegetation disturbance will be limited to the minimum required for construction.  
Clearing of brush or shrub type vegetation beneath aerial lines will be limited to severing the tops of that vegetation. Established vegetation will be removed only where necessary for the construction of roads, buildings, poles, towers or other surface structures. In no event will herbicides be used without the written permission of the Superintendent.
6. Tree and Brush Disposal Requirements

Unless otherwise specified by the Superintendent, the following tree and brush disposal requirements shall be in effect:

  - a. All cleared woody material four (4) inches diameter or less inside the bark at the small end will be considered as brush or slash and disposed of by piling and burning at a safe distance from surrounding vegetation or by chipping in portable chippers unless other disposal methods are specified.
  - b. All straight cleared woody material between four (4) and seven (7) inches diameter inside the bark at the small end will be trimmed of smaller branches, cut into straight seven (7) foot pieces and piled on or adjacent to the right-of-way for utilization by the Navajo people.
  - c. All straight cleared woody material seven (7) inches or more in diameter inside the bark at the small end will be trimmed of all limbs and branches, sawed into 16 feet 6 inches straight saw log lengths and piled into log decks at locations accessible by logging trucks and loaders.
  - d. All other woody material will be disposed of in accordance with Section 6a above.  
Grantee shall obtain a burning permit from the Navajo Area Branch of Forestry before burning any debris, trees or brush in forested areas.
7. Trenches and Excavations

Trenches and other excavations shall be left open for the minimum period of time compatible with construction requirements. Materials removed during construction must be backfilled or disposed of in such a manner as to prevent concentration of water runoff which would cause accelerated erosion and prevent rows or piles of rubble or large rock that would hinder movement of livestock or big game animals or detract from scenic attributes.
8. Depth and Coloration of Underground Utilities

Underground utilities will be covered to a depth of three (3) feet or as specified by engineering standards and requirements, whichever is greatest. Where such depths are not feasible, the utility shall be placed on or elevated above the surface as specified by engineering standards and requirements. When placed on or above the surface, the utility will be painted to blend with the natural surroundings using the indicated cover type:

<u>Forests and Woodlands:</u>	Green Fed. Std. No. 595 34127
<u>Sagebrush:</u>	Grey Fed. Std. No. 595 36357 C.I.E. Measurement x. 3264 y. 3411 Y.3659
<u>Badlands:</u>	Brown Fed. Std. No. 595 30318 C.I.E. Measurement x. 3557 y. 3960 Y.3368

When such painted surfaces occur near roads and/or may be a safety hazard, a reflective or bright color shall be used.

9. **Source of Cushioning Material**

Pad dirt or cushioning material will be taken only from borrow pits authorized by the Area Director if not available within the utility right-of-way.

10. **Road, Fence and Livestock Barriers**

When the utility is to be placed under or over a BIA or State road right-of-way, the method of crossing shall be approved by the Superintendent or appropriate State Highway Department in advance of construction.

Existing fences crossed by the right-of-way will be braced and tied off before cutting so as to prevent slacking of the wire. The opening will be closed temporarily as necessary during construction to prevent the escape of livestock and upon completion of construction the fence will be repaired to its original condition. If construction destroys a natural barrier used for livestock control, the gap shall be fenced to the satisfaction of the Superintendent and land user.

11. **Maintenance and Reclamation of Roadways**

Roads constructed and used for utility construction, maintenance and operation will be maintained twice each year with grading and cleaning of drainage structures. All roads constructed exclusively for construction purposes will be closed to vehicular traffic and rehabilitated after construction is completed as directed by the Superintendent unless otherwise specified by that official.

12. **Water Bars**

Grantee will place water bars on disturbed areas as required by the Superintendent. The following is a general guide for water bar spacing:

<u>% Slope</u>	<u>Spacing Interval</u>
Less than 2½%	200 ft.
2½%	150 ft.
6% to 9%	100 ft.
10% to 15%	50 ft.
More than 15%	30 ft.

13. **Revegetation**

Within one (1) year from the completion of construction the Grantee shall seed disturbed areas designated by the Superintendent with plant species specified by that official. In addition, the Superintendent may require the following revegetation operations at Grantee's expense:

- Exclude domestic livestock from reseeded areas with fencing.
- Apply fertilizers as needed for vegetation establishment.
- Reseed and refertilize as needed for vegetation establishment.

14. **Maintenance of Improvements**

All existing improvement affected by construction and maintenance of right-of-way facilities shall be maintained in servicable condition at all times.

15. **General Right-of-Way Maintenance**

Grantee shall maintain right-of-way to the satisfaction of the Superintendent for the duration of the right-of-way. Such maintenance shall include, but not be limited to soil stabilization, removal of litter and maintenance of a clear and healthy environment.

16. **Restoration Upon Right-of-Way Relinquishment**

Upon relinquishment of this right-of-way, the Superintendent may require the removal of all aerial, surface and subsurface facilities from the right-of-way and reclamation operations including, but not limited to contouring cross-rippling and revegetation.

17. **Raptor Protection**

Aerial powerlines shall include all applicable design features described in the publication "Suggested Practices for Raptor Protection on Powerlines" available from:

Raptor Research Foundation, Inc.  
Department of Zoology - 167 W18D  
Brigham Young University  
Provo, Utah 84601

The use of design features not included in this publication must be acceptable to the Superintendent.

The Superintendent reserves the right to require modification of or additions to all powerline structures placed on the right-of-way if the Navajo Tribal Fish and Wildlife Service determines such modifications or additions are necessary to insure the safety of raptor or birds of prey. Grantee shall assume full financial responsibility for the cost of such modifications or additions.



120 N. MARINA STREET • PRESCOTT, AZ 86301

May 12, 2005



The Honorable Rick Renzi  
United States House of Representatives  
418 Cannon House Office Building  
Washington, D.C. 20515

Re: Electrical Service on the Navajo Reservation

Dear Representative Renzi:

I am writing in response to your letters to Chairman Jeff Hatch-Miller of the Arizona Corporation Commission ("ACC") and to Donna Cobb with Arizona Public Service Company ("APS") regarding electric service provided by APS to certain communities within the Navajo Nation. I apologize for the delay in responding in writing. This letter follows conversations Ms. Cobb and I have had with Walter Phelps of your Flagstaff office since we received your last letter.

Although the June 18, 2004 letter from Rayola Werito to your office indicates that an expired lease agreement has resulted in an inability for certain Navajo Nation members to obtain electric service from APS, these are two separate issues. I will address both of these issues below.

Expired 69kV Right of Way

APS owns a 69kV line that runs from Grey Mountain into Tuba City. In 1956, APS obtained a twenty-five year right of way ("ROW") from the Bureau of Indian Affairs ("BIA") for that line. The ROW expired on April 6, 1981. I believe this ROW is what Ms. Werito is referring to in her letter when she mentions an expired lease agreement.

In March 1981, APS applied to the BIA to renew the ROW. On July 1, 1982, in response to a request by the Area Director for the BIA, APS submitted a revised application with additional information incorporating the "partitioning of lands" between the Navajo Nation and Hopi Tribe. In its revised application, APS also reduced the requested ROW width from 40 feet to 20 feet.

Because of the absence of action by BIA, APS resubmitted the application for renewal of the ROW three additional times since July 1982 (in 1990, 1996 and, most recently, September 17, 2004) and continues to be willing to work with the BIA and the Nation to have the ROW renewed. In February of this year, the BIA, Navajo Region, responded to



Honorable Rick Renzi  
May 12, 2005  
Page 2 of 3

our pending application by requesting for the first time additional information and documents to support their issuance of a grant of easement. Specifically, the BIA has requested that APS work with the Navajo Region to comply with the National Environmental Policy Act ("NEPA") and that APS prepare and submit an archeological survey and a cultural resources inventory report. Those efforts are under way and APS expects to have the additional information to the BIA by the end of July, 2005.

Although the ROW for the referenced 69kV line expired more than 20 years ago, APS has continued to provide service over that ROW to our customers in the Tuba City and Cameron areas, as we did not believe it would be right to cut off power to the communities simply because the BIA had not yet renewed the ROW. Thus, although we continue to hope that a new ROW will be issued soon, the absence of that renewed ROW has not resulted in any denial of service to our existing customers.

#### Electric Service to New Residential Customers

A separate, but likely more pressing issue for your office and our customers raised by Ms. Werito's letter relates to the difficulties APS has encountered in providing electric service to *new* customers located on the Navajo Reservation. APS can only extend service to new customers after it has obtained the consent of the Navajo Nation to cross Navajo Nation lands *and* the consent of each individual Homesite Lessee whose land(s) would have to be crossed to get power to the new customer.

Until 1995, the BIA (with the agreement of the Navajo Nation) issued APS Grants of ROW that gave APS the needed authorization to cross Navajo Nation lands to install new service lines. In 1996, in response to an application by APS to extend electric facilities to a new customer, the Navajo Nation indicated that it would not authorize the construction of any new service lines without APS agreeing to follow a new process that the Nation wanted to implement. Under that new process, APS would be required to execute a new service line agreement directly with the Navajo Nation to obtain the necessary authority to cross Navajo lands. APS also would be required to execute agreements with any affected Homesite Lessees whose land had to be crossed for a new service line extension. In its response, the Nation also included a proposed service line agreement with new terms and conditions that imposed a much greater burden on APS and raised a number of legal, jurisdictional, economic and logistical issues.

APS and the Nation attempted to negotiate a new service line agreement over the course of the next several years. In May 2000, APS was informed that the Nation had transferred the issue to new legal counsel who then prepared a new draft service line agreement that was significantly different than the version discussed before.

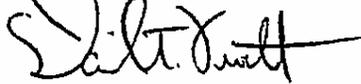
Discussions on the new service line agreement were somewhat sporadic until mid-2004, when APS and the Nation reinitiated more regular discussions. Since that time, APS and the Nation have been working toward a new service line agreement that APS hopes will

Honorable Rick Renzi  
May 12, 2005  
Page 3 of 3

meet both its and the Nation's needs and be consistent with the APS Extension Policy approved by the Arizona Corporation Commission ("ACC"). That Extension Policy applies to all APS customers throughout our service territory. I and other APS representatives met with the Navajo Nation's legal counsel and the Navajo Nation Resources Committee in Counselor, New Mexico on May 9, 2005 to discuss the remaining outstanding issues in the new service line agreement. Mr. Phelps also attended that meeting. As we hoped, that face-to-face meeting between APS and Navajo Nation representatives assisted us in making significant progress toward a new service line agreement and we agreed with Navajo Nation legal counsel to work to provide a recommended agreement to the Resources Committee for review at its meeting in late June or early July.

We appreciate the interest shown by Mr. Phelps of your office in attending our meeting with the Navajo Nation and welcome his thoughts and comments as we move forward toward a fair and reasonable resolution. Please feel free to call me at (928) 776-3621 if you have any questions.

Sincerely,



Daniel Froetscher

cc: Jeff Hatch-Miller, Chairman  
Walter Phelps  
Luralene Tapahe



424 Branch of Right of Way

**United States Department of the Interior**  
**BUREAU OF INDIAN AFFAIRS**  
Navajo Region  
P.O. Box 1060  
Gallup, New Mexico 87305



FEB 16 2005

Mr. Wayne Darby, Senior Land Agent  
Arizona Public Service  
Land Services Department  
10025 N. 21st. Ave., Building "L"  
Phoenix, Arizona 85021

Dear Mr. Darby:

The Division of Real Estate Services received your application for renewal on Tuba City 69kV Electric System that expired in 1981. After reviewing the application, we discovered several missing documents. As you are aware, no granting of a right-of-way can be made unless the landowner has consented. On September 17, 2004 a copy of your application was sent to the Navajo Nation. See enclosed letter.

To properly review and expedite a grant of easement, the following documents must accompany your application:

1. **Renewal of right-of-way application.** If a renewal of right-of-way involves no change in the location or status of the original right-of-way grant, the applicant must file a certificate under oath setting out this fact.
2. **Waiver on fee.** The Bureau does not assess fee of any type. If you're requesting a waiver on the right-of-way consideration, the Navajo Nation must consent to the waiver. The Bureau of Indian Affairs requires an appraisal report to ensure the value of the consideration is of current fair market value. In response, we advised the Navajo Nation of the appraised value they waived.
3. **The original easement approved in 1966 exempted archaeological clearance.** Under the National Historic Preservation Act of 1966, we are required by law to have an archaeological survey and a cultural resources inventory report. You may consult with the Historic Preservation Department and the Archaeology Department of the Navajo Nation for assistance.
4. **The environmental assessment is also part of the National Environmental Policy Act.** To be in compliance, we advise you to contact the Navajo Region, Environmental Office who will assist you on the environmental assessment or categorical exclusion with findings of no significant impact. The phone number to Environmental Office is (505) 863-8415.



No further review will be made at this time, until the consent from the Navajo Nation and additional documentation are received.

Sincerely,

*Irvin Bekis*

Acting Regional Director

Enclosure

cc: Dept of Minerals, the Navajo Tribe  
Project Review, the Navajo Tribe



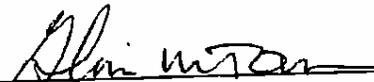
**THE  
NAVAJO  
NATION**

P.O. Box 9000 • WINDOW ROCK, ARIZONA • 86515

JOE **SHIRLEY, Jr**  
VICE PRESIDENT  
FRANK J. **DAYISH, Jr**

**MEMORANDUM**

TO: Howard Draper  
Project Review Office  
Division of Natural Resources

FROM:   
Gloria Tom, Director  
Department of Fish and Wildlife  
Division of Natural Resources

DATE: May 24, 2005

SUBJECT: DNR-10917 Approving the grant of right-of-way renewal to Arizona Public Service (APS) to operate and maintain existing overhead "Tuba City 69 kV Transmission Line" located from Flagstaff to Cameron and Tuba City, Coconino County, Arizona.

The APS has submitted a right-of-way application to the Bureau of Indian Affairs for additional 25-year term for the Tuba City 69kV electric system on, over and across the Navajo Nation Trust Lands, Coconino County, Arizona. The proposed ROW consists of 15.429 acres, more or less, including substations. The APS requests an additional 25-year term. The initial grant of easement for ROW expired on April 5, 1981. The transmission line is a radial feed system meaning the line terminates in the Tuba City area and does not continue on to feed others. This is part of numerous attempts to renew the line. In 1956, Bureau of Indian Affairs and APS agreed to extend electric service to Rare Metal Corporation in Tuba City.

The Navajo Fish and Wildlife Department has reviewed your project request and the subject application is forwarded with **none recommendation** on May 24, 2005.

The **none recommendation** is due to the following:

1. No Environmental Assessment enclosed with the SAS packet,
2. APS needs to contact our department and request a species list from the Natural Heritage Program. They can be contacted at 928/871-6472,
3. APS needs to prepare and a biological evaluation report of their existing transmission line and submit the report to the Navajo Nation Fish & Wildlife Department for further review and concurrence.

Thank you. If you have any questions, contact Rita Whitehorse-Larsen, Wildlife Biologist, at 928/871-7060/6450.

Cc: APS  
Bureau of Indian Affairs - Navajo Regional Office  
Navajo Nation Fish & Wildlife Department - Chrono file



Navajo Nation Fish and Wildlife Department • PO BOX 1480 • Window Rock • Arizona • 86515  
Office: 928/871-6450 Fax: 928/871-7069 Website: www.navajofishandwildlife.org

**THE  
NAVAJO  
NATION**

**MINERALS DEPARTMENT**  
Post Office Box 1910  
Window Rock, Arizona 86515  
Telephone: (928) 871-6587/6588  
Telefax: (928) 871-7095

*Joe Shirley, Jr.*  
President

*Frank Dayish, Jr.*  
Vice President

June 10, 2005

**MEMORANDUM**

TO: George Arthur, Chairperson  
Resources Committee

FROM:   
Akhtar Zaman, Director  
Minerals Department

SUBJECT: DNR 10917: Approving the Renewal of a 69 kV Transmission Line Right-of-Way for Arizona Public Service Company

The subject right-of-way (ROW) expired on April 5, 1981. A renewal application was filed with the Bureau of Indian Affairs (BIA) in 1981 with a request to waive the consideration. The Navajo Nation did not consent to renewal of the ROW at that time. On June 09, 1995, Mr. Melvin Bautista sent a letter to Arizona Public Service Company (APS) urging them to contact the Navajo Nation Rights-of-Way Task Force to negotiate the terms and conditions of the ROW without further delay or else the Navajo Nation would invoke its trespass statutes. On February 5, 1996, APS submitted another renewal application for a twenty-five (25) year term retroactive to the expiration date of April 5, 1981. However, there was no effort on APS's part to negotiate the terms and conditions, including the consideration, with the Navajo Nation. The situation was also complicated by APS by their refusal to agree to the Navajo Nation standard terms and conditions for certain local service lines ROWs APS was requesting.

As of this date, APS is in trespass. The trespass issue and the retroactive payment since 1981 have to be resolved. Further, Mr. Ken Craig, Acting General Manager, Navajo Tribal Utility Authority (NTUA), advised us on June 9, 2005 that NTUA is going to start its discussions with APS to acquire the 69 kV transmission line. The past payment to the Navajo Nation still has to be resolved even if negotiation between NTUA and APS is successful. There are several commercial users on the line.

Under such circumstances, we do not recommend approval of this ROW for APS. Please advise if you have any questions.

RD:eab

c: Arvin S. Trujillo, Executive Director, Division of Natural Resources

