Do: R. Browning / D. Lineham
MS 623 SS

Copy for
Browning / Lineham

OREGON POSITION
ON
DISPOSAL OF THE
HANFORD DEFENSE WASTES

July 10, 1986

Prepared by:

The Oregon Department of Energy

625 Marion Street NE, Salem, OR 97310

OREGON POSITION
ON
DISPOSAL OF THE HANFORD DEFENSE WASTES

In April 1986 the U.S. Department of Energy issued a draft environmental impact statement (EIS) on Hanford defense waste disposal. The draft EIS sets forth disposal options for radioactive wastes accumulated during four decades of weapons production at Hanford.

The ODOE Hanford Advisory Committee sponsored two public workshops to discuss and comment on EIS issues. The Hanford Review committee reviewed the draft EIS and also provided technical comments. These reviews and comments were used to develop the Oregon position.

The comments reflected the need for Oregon to take a strong position on deciding the permanent disposal of Hanford defense wastes. Our challenge is to obtain the necessary level of health and safety in the most cost effective way. Then, we must work to gain support for our position.

Basis for Oregon's Position

We must eliminate the long-term risks to public health and safety of defense wastes temporarily stored at Hanford. We should make decisions now that can be made now. Those wastes that are easily cleaned up should be. For those wastes for which we have the retrieval and disposal technology, and where current practices eventually will lead to leaks, we should take all reasonable actions to process and dispose of the waste.

Some wastes are difficult to deal with, but current storage poses no immediate problem. For those, we must develop greater confidence in our options. This process should be designed to take no more than the next five years. Our priority should be to avoid long term risks to ground water and the river. Research should be focused on ways to dispose of wastes by looking for innovative waste treatment techniques.

Based on these criteria, the Governor has taken this position on Hanford defense wastes.

1) Transform existing and future high-level liquid wastes into glass. Dispose of these wastes in a future geological repository.

2) Treat and ship post-1970 plutonium wastes (called transuranic [TRU] wastes) to the defense repository for plutonium wastes in New Mexico.

3) All other wastes must be better understood in terms of the trade-offs. Reasonable decisions must be made, but in light of the priorities mentioned above.

The various wastes are discussed below.

Double Shell Tanks contain high level liquids and suspended solids.

Option 1. Waste in these tanks could be retrieved, glassified and disposed in a future geologic repository. The plant to glassify these wastes could be completed by 1994. The cost of this option is about $877 million for existing waste, and $1.1 billion for future waste.

Option 2. Dried and stabilized waste could be disposed near ground surface. The waste could be covered with a rock and soil barrier to prevent flow of rainwater through the waste.

Oregon's Position

Oregon recommends option 1. This material is liquid high-level waste. If left in liquid form, these wastes eventually will leak. These wastes also are easily retrievable. They should be disposed in a geologic repository. This approach is consistent with standards for the commercial industry.

Single Shell Tanks contain solids in the form of sludge or salt cake. The radioactivity in this material is similar to the wastes in the double shell tanks. But, it is older and more dilute.

Option 1. The waste could be retrieved and separated into high-level and low-level waste. High-level waste could be converted to glass for future repository disposal. The low-level waste could be converted to a cement-like material and disposed on site.

Option 2. The waste could be stabilized in place. This treatment would include filling the empty space in tanks with crushed rock. The rainflow barrier described earlier would also be used.

Option 3. There is not enough information to choose now. We need a better understanding of the trade-offs and more confidence in the options before we decide.

Oregon's Position

Oregon recommends Option 3. The material in single shell tanks should be processed no matter what option is chosen. The best method is to retrieve and glassify it. But, this option involves tremendous cost and needless potential radiation exposure to workers. US DOE

should investigate other cost effective means of retrieval. We believe this can be and should be achieved within five years.

The wastes in single shell tanks have been processed to reduce the water in them. This has reduced the possibility of leakage from deteriorating tanks. Thus, time spent to research disposal options will not significantly impact the environment in the short-term.

If studies show that in-place stabilization is the best option for single shell tank wastes, engineered barriers should not be the only means of protecting public health and safety. Multiple barriers are needed. An example would be to mix the wastes within the tank with grout. Thus, they would not easily be dissolved in water if it entered the tank. Engineered barriers should be relied upon as a secondary level of protection.

Post-1970 Plutonium Contaminated Wastes consist of contaminated equipment and laboratory wastes. This waste has been stored for retrieval since 1970.

Option 1. Removal and treatment of the waste at Hanford. Eventual disposal at the defense repository for plutonium wastes in New Mexico. This would require a processing facility to be completed by 1990-1993. The cost of this option is $180 million.

Option 2. Near surface stabilization with a cement-like material. A barrier identical to that described in the second option for double shell tank waste will also be used.

Oregon's Position

Oregon recommends option 1. The storage of these wastes was designed for retrieval. These wastes pose an extremely long-term radiation hazard. They have been put in wooden boxes and steel drums and buried. The deterioration of these containers eventually will release contamination into the soil. They should be retrieved and disposed in the New Mexico repository.

Pre-1970 Plutonium Contaminated Waste consists of general trash, failed equipment, and 24 soil sites contaminated by releases directly to the ground. These wastes are not readily retrievable.

Option 1. Removal and treatment of buried solid waste and soil sites which exceed US DOE's classification for low-level plutonium contaminated waste. Treated waste could be shipped to the defense repository for plutonium wastes in New Mexico.

Option 2. Immobilization of the waste burial grounds by filling with a cement-like mixture. The area is to be covered with a rainflow barrier as previously described.

Option 3. There is not enough information to choose now. We need a better understanding of the trade-offs and more confidence in the options before we decide.

Oregon's Position

Oregon recommends Option 3. The wastes should be removed and treated if reasonably achievable. These wastes pose the same hazard as post-1970 contaminated waste and should be treated the same. If this goal cannot be achieved, more confidence in stabilizing the waste and confirmation of barrier protection must be accomplished. Again, this should be completed within five years.

These wastes have been buried for many years. Spending more time to research proper retrieval and disposal methods will not increase the the hazard in the short-term.

Strontium and Cesium wastes are double encapsulated in stainless steel cylinders. These wastes are stored in water basins.

Option 1. The capsules could continue to be stored in water basins until 1995. Capsules could then be packaged and shipped to a future geologic repository.

Option 2. Capsules could continue to be stored in water basins until 2010. Beginning in 2010, the capsules could be placed in a dry storage vault. A protective barrier as described earlier could be constructed over the site in the years 2013 to 2015.

Oregon's Position

Oregon recommends Option 1. Many of the capsules have been leased to industry for sterilization facilities and process control. The remainder's stored in water pools and is under constant attention. There is no immediate hazard from short-term storage of this waste. But, these capsules are highly radioactivite and will remain so for thousands of years. Eventual geologic disposal will provide safe long-term disposal.

Other Concerns

Oregon also has serious concerns about chemical waste and low level radioactive wastes from defense activities. USDOE's proposal does not deal effectively with these issues. But, they are potentially serious risks to public health and safety and the environment. Oregon supports

Congressional initiatives to direct US DOE to comply with current federal and state requirements on waste handling and disposal. A schedule of compliance should be drawn up and enforced. Congress must provide funding to achieve clean-up of these wastes as well. This funding should be provided before any of these actions are required by Congress.

Forty years of defense materials production has resulted in an enormous amount of radioactive wastes at Hanford. So much waste poses difficult and complex retrieval, processing, and disposal problems. Funding has been ample for the production of the defense materials but not for waste disposal. Oregon believes that funding policy is not acceptable. Congress requires the commercial nuclear industry to concurrently set aside funds for the disposal of radioactive wastes as they are generated. USDOE also should be subject to this requirement. Plutonium production should not be allowed without concurrently providing funding to dispose of generated wastes.

Governor Atiyeh will be working with Oregon's Congressional delegation to see that these actions are carried out.

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NOTE: This paper will be the executive summary for the State of Oregon's technical and public comments on the Draft EIS. These formal comments will be submitted to US DOE on or before August 9, 1986.

LF/MLB:ml
2939m (D1/F2)

Attachment A

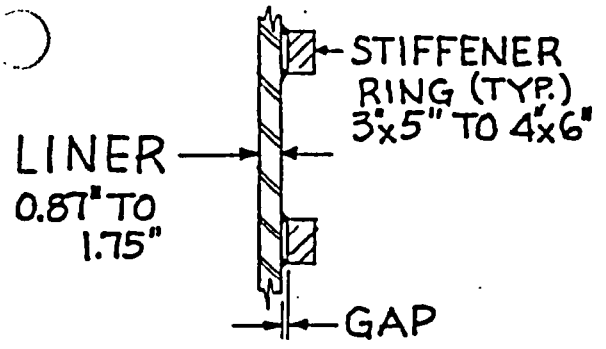
encl. to Memorandum to RBrowning from FRCook, Code #2085

	Completed
• Waste Package Site Characterization Plan Conceptual Design Report submitted to DOE-RL	7/14/86
• Issued* draft "Copper Feasibility Summary Report to Congress" to DOE	7/2/86
• Submitted* draft "Final Copper Feasibility Report" to DOE	7/31/86
• Issued* letter report "Pit Growth Behavior of a Carbon Steel Candidate Container Material" to DOE	7/31/86
• Transmitted* "Evaluation of Coupled Chemistry Fluid Flow Models for Near-Field Analysis - Autoclave Experiment Simulation" to DOE	7/31/86

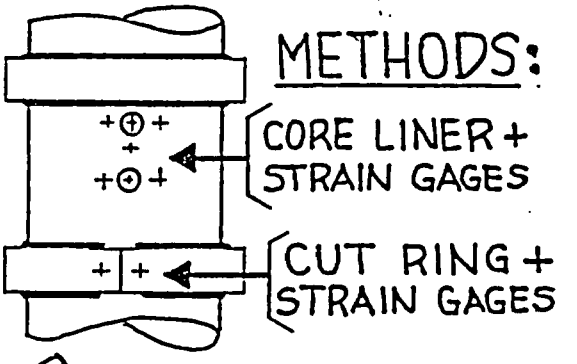
WBS #	PROJECT TITLE
L1E2	VERIFICATION AND BENCHMARKING OF HEAT TRANSFER AND FLUID FLOW CODES
L1E4-1	DEVELOPMENT OF INCIDENT/ACCIDENT STATISTICS FOR PRECLOSURE SAFETY ASSESSMENT
L2A1P	TECHNICAL SUPPORT OF WASTE PACKAGE QUALIFICATION TEST SYSTEM DESIGN AND ENGINEERING PLAN PREPARATION
L2C2P	GEOTHER COMPUTER CODE EVALUATION
L2D2P	BWIP/MCC-105.1, 105.4, 105.5 TEST METHODS
L2D2R	CONTAINER MATERIALS, SLOW STRAIN RATE STUDY
L2D3P	RADIONUCLIDE SORPTION-SOLUBILITY STUDIES, ENGINEERED BARRIERS DEPARTMENT
L2D4P	HYDROTHERMAL MATERIALS TESTING
L2D1R	BWIP/MCC-14.4 WASTE FORM COMPLIANCE TEST METHOD
L2D3R	ORGANIC ANALYSES OF SODIUM BENTONITE PACKING MATERIALS
L2D4R	SENSOR DEVELOPMENT
L2D4T	SCANNING ELECTRON MICROSCOPE OPERATIONS
L2E2T	PACKING DEVELOPMENT TESTING COMMERCIAL WASTE FORM
L2F1P	IMPACT STRESS AND FRACTURE MECHANICS STUDY FOR CONTAINER HANDLING ACCIDENT CONDITIONS (COMMERCIAL)
L3D1A	INTERAGENCY HYDROLOGIC WORKING GROUP
L3D1B	VARIABLE DENSITY EFFECTS
L3E2A	ORGANIC ANALYSIS OF GROUNDWATER AND DRILLING MUD LEACHATE
L3E2B	RADIONUCLIDE SORPTION STUDIES, SITE DEPARTMENT
L3E2C	IN-SITU RETARDATION COEFFICIENTS
L9C3	MANAGEMENT CONTROL SYSTEM FOR BWIP

Attachment C

1. MEASURE GAP



2. QUANTIFY STRESS



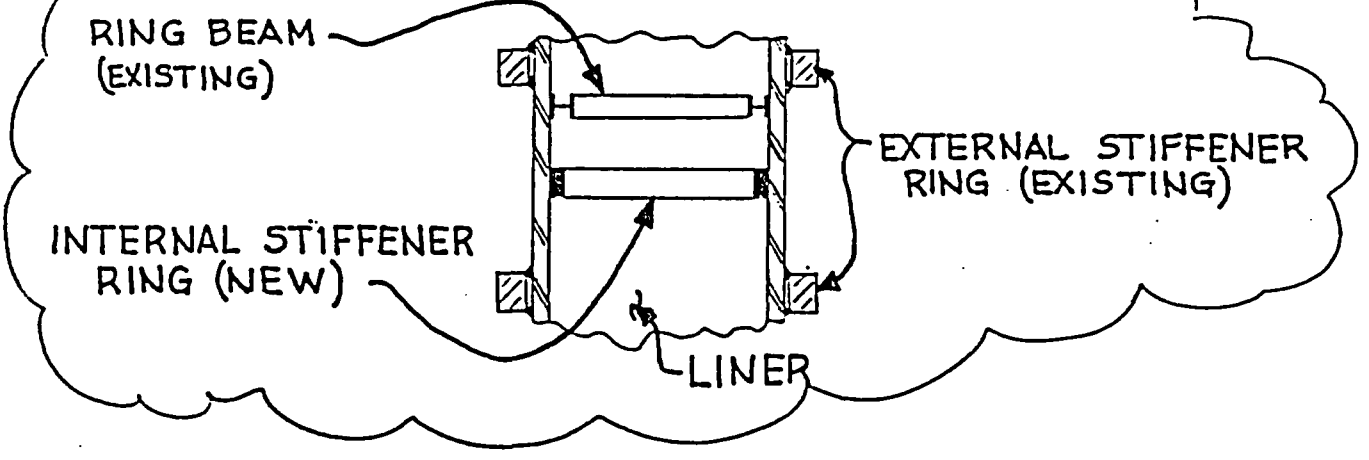
3. ◦HEAT TREATMENT FOR STRESS RELIEF ◦RE-MEASURE STRESS

RESULTING RESIDUAL STRESS		
LOW	MODERATE	**HIGH**

SE LINER AS-IS
◦DESIGN/FAB. 560' ADDITIONAL LINER

DESIGN/FAB. ENTIRE NEW LINER

ADD INTERNAL STIFFENER RINGS + DESIGN/FAB. 560' ADDITIONAL LINER



STUDY NO. 11 LINER PROBLEM RESOLUTION

Attachment D

D

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

August 8, 1986

Mr. D. L. Olson
Director, Vault Waste Isolation Division
Office of Assistant Manager for Commercial Nuclear Waste
Richland Operations Office
U.S. Department of Energy
P.O. Box 550
Richland, Wa. 99352

Dear Mr. Olson:

Consistent with the provisions of Appendix 7 of the Site Specific Agreement between DOE and NRC, I am notifying you of Ms. Alma Hale's prospective assignment to this office during August 14, 1986 for an orientation tour of the project site facilities, including the NSTF. Her request for clearance to 200, 300, and 600 areas has been made through our regular channels for transferring security clearances.

Also in the context of Appendix 7 we are planning an assignment of three people cognizant in the area of repository design and rock mechanics for the period, August 20 to 21, 1986. They are J. Buckley, D. Tiktinsky and M. Board. Their clearances to the site are being requested via separate correspondence through Security.

They will have an interest in BWIP Project records and draft documents concerning repository and exploratory shaft and test facility design, rock mechanics analytical techniques, which exist or are in development, and geotechnical data concerning the design, particularly rock mechanics aspects. We would expect to communicate with DOE, and RHO personnel and have access to various records pertinent to our review. Our prime objective is to review available information and our communications would be oriented to obtaining the pertinent information. We do not anticipate any technical discussions at this time, although such discussions would be desirable, considering RHO staff efforts on planning activities, if time permits.

Specific items which we would like to review are as follows:

1. The Site Specific Requirements Document.
2. Engineering Study 11 Draft.
3. Repository Design Requirements Document Draft.
4. Repository Subsystem Description Draft.
5. SCP Conceptual Design Report for the 90% review in March, 1986.

~~8608110224~~

2pp

6. KE/PB's Interim Report on Improved Geotechnical Design/Analysis Methodology for the Advanced Conceptual Design, July, 1986, forwarded by KE/PB's letter, XKR 2788 of July 14, 1986.

7. KE/PB's Design Methodology Document.

8. KE/PB's work plan approved by RHO for the work reported in item 6 above.

9. Draft reports or SCP chapters which contain information regarding:

a. Numerical models used in repository design, including rock mechanics analyses,

b. Geostatistical information on basalt flow thickness pertinent to projection of the flow thickness at the repository horizon.

We would expect to discuss our observations with you and other cognizant project personnel as appropriate, prior to the visitors leaving Richland, consistent with this Office's basic objective of providing early feedback of OR staff observations.

Sincerely,

F. Robert Cook
Senior On-Site Licensing
Representative, BWIP
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

DISTRIBUTION: Letter, Cook to Olson of August 8, 1985.

R. Holten, DOE/RL
J. Mecca, DOE/RL
J. Knight, DOE/HDQRTS
R. E. Browning, NRC
J. Buckley, NRC
J. Linehan, NRC
D. Dalhem, DOE/RL
G. W. Jackson RHO
L. Connell, RHO
J. Greeves NRC

Attachment E

E

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

July 18, 1986

Mr. O. L. Olson
Director, Basalt Waste Isolation Division
Office of Assistant Manager for Commercial Nuclear Waste
Richland Operations Office
U.S. Department of Energy
P.O. Box 550
Richland, Wa. 99352

Dear Mr. Olson:

Consistent with the provisions of Appendix 7 of the Site Specific Agreement between DOE and NRC, I am notifying you of Mr. Chang's Mr. Wick's and Ms. Fraker's prospective assignment to this office during August 5 to 7, 1986 for the purpose of reviewing BWIP Project records and draft documents concerning materials testing and waste package design work. We would expect to communicate with DOE, and RHO personnel and have access to various records pertinent to our review. Our prime objective is to review available information and our communications would be oriented to obtaining the pertinent information. We do not anticipate any technical discussions at this time, considering RHO staff efforts on planning activities.

Mr. LaMont is aware of our objectives in this review. Attachment A identifies a list of documents which we have an interest in reviewing. We can further discuss specific items of interest prior to August 5, if you desire. Please call Mr. Chang or myself in this regard.

We would expect to discuss our observations with you and other cognizant project personnel as appropriate, prior to Mr. Chang's leaving Richland, consistent with this Office's basic objective of providing early feedback of OR staff observations.

Sincerely,

/s/ FRC

F. Robert Cook
Senior On-Site Licensing
Representative, BWIP
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Attachment as stated:

~~8610140207~~

3pp.

DISTRIBUTION: Letter, Cook to Olson of July 18, 1985.

R. Holten, DOE/RL
J. Mecca, DOE/RL
J. Knight, DOE/HDQRTS
R. E. Browning, NRC
T. Johnson, NRC
D. Dalhem, DOE/RL
G. Harper, RHO
K. Chang, NRC
J. Linehan, NRC

Rdlg

*Some suggested documents:

Attachment: Ltr. Cook to Olson 7/18/86

1. "Waste Packages Preliminary Reliability Analysis Report" SD-BWI-TI-287 – is not
2. "Progress Report on Hydro thermal Interaction of Defense Waste Glass with Basalt Groundwater at 150°C" SD-BWI-TI-312 release.
3. Updates to "Barrier Materials Test Plan" SD-BWI-TP-022.
4. Test procedures used for corrosion tests (uniform & localized corrosion)
5. "Waste Package Materials Testing Science Plan" (Draft)
6. "Performance Assessment Plan", SD-BWI-PAP-003 (Draft)
7. "Waste Package Advanced Conceptual Design Report"

*Some suggested documents:

1. "Waste Packages Preliminary Reliability Analysis Report" SD-BWI-TI-287
2. "Progress Report on Hydro thermal Interaction of Defense Waste Glass with Basalt Groundwater at 150°C" SD-BWI-TI-312
3. Updates to "Barrier Materials Test Plan" SD-BWI-TP-022.
4. Test procedures used for corrosion tests (uniform & localized corrosion)
5. "Waste Package Materials Testing Science Plan"
6. "Performance Assessment Plan", SD-BWI-PAP-003
7. "Waste Package Advanced Conceptual Design Report"

annual meetings in October of each year; the last one took place in Bandung on October 7-10, 1985. The association publishes a bimonthly newsletter, *Warta Hagi*, and a biquarterly journal, *Geofisika*.

Other major geoscience societies are IAGI (Ikatan Ahli Geologi Indonesia), Association of Indonesian Geologists; and IPA, Indonesian Petroleum Association. IPA can be compared with AAPG. Geophysical papers are also published by IAGI in its journal *Geologi* and by IPA in its *Proceedings of Annual Conventions*. In December 1984, IAGI had more than 800 members. IAGI holds its annual meeting in December; IPA in June.

Geophysical activities and research

Geophysical activities are varied. Oil companies such as Pertamina concentrate on exploration for hydrocarbons. In 1983, the oil companies carried out seismic profiling (65 258 km), gravity (15 414 km), and airborne magnetic surveys (18 750 km). (These data are from the Indonesian Mining Yearbook, 1983.)

The Directorate General of Geology and Mineral Resources conducts exploration for minerals, groundwater and coal. It is also active in the evaluation of geothermal resources, and in geophysical mapping and engineering studies. Research is being done to improve field survey techniques and interpretation. Studies on volcanoes, particularly attempts to predict volcanic eruptions, are an important part of geophysical research in Indonesia. GRDC is preparing a seismic hazard map which will be based on the result of seismotectonic studies and the investigation of active faults and seismic events. Also, paleomagnetic studies are being actively pursued and data used to understand the tectonic development of the area. The same institute carries out regional gravity mapping on a systematic basis. The aim is to produce maps at 1:100 000 scale for Java and at 1:250 000 scale for the outlying islands. A gravity map of Indonesia at 1:2 000 000 will later be compiled. At present, most geophysical data are kept by researchers and their institutions.

It has been proposed by HAGI that a common data bank be established by the government such as the National Survey and Mapping Coordinating Body or Bakosurtanal (Badan Koordinasi dan Pemetaan Nasional).

Airborne magnetic and radiometry surveys have been carried out with the aim to locate structures related to oil accumulation and mineral deposits. Since 1956, resistivity surveys have been conducted in groundwater exploration, mainly in the coastal region. All research projects are funded by the government.

MOHAMAD UNTUNG
Geological Research and Development Centre
Jalan Diponegoro 57
Bandung, Indonesia

Attachment F

Seismic research associated with deep level mining: Rock burst prediction and vibration damage to buildings in South Africa

Introduction

Rock bursts in the deep-level Witwatersrand gold mines have been a source of fatalities and injuries ever since the mines exceeded roughly one kilometer in depth. In addition, the associated vibration damage to buildings and structures is a very real problem in the relatively densely populated mining areas. Many mine buildings are continually subjected to severe earth tremors that exceed local magnitude = 4.0. The Bernard Price Institute of Geophysical Research (BPI), in collaboration with researchers from the Chamber of Mines of South Africa and associated mining houses, has led geophysical research activities in this field.

Mine-induced seismicity

The problem of predicting individual seismic events has been widely researched but no technique has been devised that is both successful and practical. Much fundamental knowledge concerning the nature of the failures is needed before prediction can be realistically considered for Witwatersrand deep mining. Monitoring seismic events throughout the gold fields continues on a routine basis both by specific mines and under the auspices of the Geological Survey of South Africa which also maintains data base of all seismic events and records. Research work BPI has involved monitoring of both the seismic events and nonviolent creep in portions of the East Rand Proprietry m (ERPM) at Boksburg. For these studies a dense array of seism meters, which were capable of recording both small and la events accurately, was employed. Mercury tube tiltmet monitored the slow closure of the stopes, while data from Sac Evertson strain gauges continuously recorded the result volume changes in the underground mass. The rock defor tion data observed during this program were supplemented v laboratory experiments on quartzites, which improved b understanding of the various failures.

The most important findings during this phase of resea work on tremors and rock bursts can be summarized as follo

1) In terms of the "signature" on a seismic record, mine ev are identical to natural earthquakes of equivalent magnit This means they have the same basic failure mechani
2) Geological/structural inhomogeneities within the mining vironment play a major role in controlling the position

severity of the seismic energy release. Local inhomogeneities in structure or petrology give rise to small perturbations in the virgin rock stresses and these perturbations can initiate the seismic releases in areas at some distance from the mining quartzites store large amounts of elastic strain-energy, violent failures often take place at a considerable distance from the most highly stressed quartzites. Strain-energy transfer must be taking place, seismically or aseismically, along interfaces between weak zones and zones of high competence.

3) In ERPM, the quartizite rock mass has such a strong and brittle character that failure by relatively large seismic events (Richter magnitude ± 3) is an inescapable consequence of deep mining. Also, the "cumulative seismic moment" is proportional to the volume or rock mined. This relationship means that as long as mining is undertaken (and reef is physically removed without being replaced), there will be significant seismic events.

4) As the tabular stopes are mined into the solid rock, they occasionally intersect "fossil" seismic ruptures; here, violent fracturing has affected the solid rock in sharply defined planar zones. Seismologists and rock mechanics engineers from the BPI and industry have examined one such ruptured zone in great detail and reconstructed the physics by which the seismic rupture propagated. These studies highlighted the complexity of the zone, revealing many features en echelon to the plane of the rupture. Energy budget calculations for the rupturing have shown that most of the energy is dissipated in heat. The Witwatersrand mines offer a unique environment for studying seismology at such a fundamental level.

5) The records from highly sensitive volumetric strain gauges did not show any premonitory strain events as forerunners of important nearby seismic events. There was, however a good correlation between the background rate of seismic activity and the rate of tilting of the rock mass. This suggests that within a specific time interval, the probability of a tremor is proportional to the rate of strain change. Microshock activity was unusually high before an event of Richter magnitude 1.2 on ERPM. Subsequently, researchers at the Western Deep Levels gold mine reported that the larger seismic events near longwall faces on the Carbon Leader reef are preceded for some hours by spatial concentration of microshock *in the zone of eventual seismic failure*.

We foresee that the large deep mines will all have seismic networks by the end of the decade which can handle large volumes of microshock data and which will thus facilitate rapid location and magnitude prediction. Whilst the purpose of the seismic network is, in part, to locate an event accurately, finding the exact location is only the start of the data analysis. Other important information concerning the size of the rupture plane, failure parameters, energy release, and facts about preceding microshocks, all add to the data base. In this way, experience will accumulate concerning the extent of forewarning that comes from the microshocks; even more important, it will be possible to ascertain whether other physical phenomena, such as radon release and electrical/magnetic field perturbations, offer promise of a shortcut to the reliable prediction of seismic events.

Vibration damage to buildings and structures

The susceptibility of a building or a structure to vibration is, in general, a complex problem. The BPI and Geological Survey of South Africa have conducted research in this field, particularly in relation to mine-induced seismicity, although the Ceres earthquake of 1969 (magnitude = 6.3) also provided an excellent source for research. Factors which clearly affect the levels of safe vibration include the following.

1) The type of structure, i.e., historic, average residential or civil, as well as its foundation are important.

2) The number of excitation cycles and the frequency content are important for a particular structure.

3) Geological conditions play a major role in determining the levels of seismic vibration from any particular source. In general, structures that are located on solid outcropping rock are exposed to lower levels of vibration compared with similar structures at the same distance but located on overburden or fill. The Ceres earthquake of 1969 provided a good example of this. The isoseismic lines for the earthquake clearly show how structures built on deep valley-soils were severely damaged whereas structures much closer to the earthquake source, but located on shallow overburden or rock, sustained considerably less damage. In the Witwatersrand area, the same phenomenon manifests itself in that buildings located almost on top of mine tremors, but footed on the Ventersdorp lavas, show relatively little damage when compared with structures farther away but located on weathered shales.

Research into the prediction of mine-induced seismicity and on the response of buildings to seismic events will always be a major component of geophysical research in South Africa in view of the associated, often fatal, hazards to man and his environment.

BRANKO CORNER, Senior Lecturer
Bernard Price Institute
University of Witwatersrand
1 Jan Smuts Avenue
Johannesburg 2001, South Africa

Attachment G

G

F. R. COOK'S COMMENTS ON THE QA REVIEW PLAN--SEPTEMBER 16, 1986

1. My previous comments on the Review Plan forwarded by my memo of 12/84 are applicable.

The comments which follow are with respect to specific sections of the Review Plan as indicated by the numbers in ( ) at the beginning of each comment.

2. (1.1) This item should clarify that "overall" responsibility means responsibility and authority associated with the responsibility. In addition this item should clarify that responsibility includes responsibility to hire and fire contractors working for the DOE on the project, to establish pay grades and manning levels and budgets within DOE for personnel working on the project, and to establish target schedules for completing work.

3. (1.2) This item should be expanded to cover the delegation of authority for any activities affecting quality of the repository disposal system, not just the "delegation of work" involved in establishing and implementing the QA program. (The phrase "implementing the QA program" is ambiguous. Also the use of the word "delegation" although consistent with the usage in Appendix B is not common. The normal usage is in the context of the delegation of authority to act for someone. I would use the word "delegate" only in the context of authority to act in one's behalf with the context that responsibility is retained at the higher level.) Items 1.3 and 1.4 go on to address the details of the actual scheme for exercising the responsibilities and authorities. This item should clarify that it is sufficient to give responsibility and delegate authority for accomplishing work at levels below the applicant. However, it is unsatisfactory to give responsibility for QA within any given entity, including the entity (person) responsible for the license application. The responsibility should remain at the person having the overall responsibility in the entity contracted to do the quality related activity. Higher level entities also retain responsibility for the lower level entity's QA.

4. (1.8) a. The use of the term "safety" is ambiguous since the term "important to safety" is used later in the paragraph. I recommend that the words "affecting public health and safety" be substituted in the first line for "affect safety and waste isolation". (See 60.31 (a) for discussion of safety and the findings which the NRC will have to make at construction authorization.

b. Also, in the last line quotation marks should be placed around "important to safety" and "isolation" since these are the terms defined in 60.2. This item should state that isolation as defined can occur at any time, including pre-closure, and that all systems, subsystems, components and structures of the repository may be effective at providing "isolation" at any time

radioactive material is present. Such a statement is necessary to clarify the scope of the application of the QA program.

c. This item should clarify that items which mitigate releases to the accessible environment by providing "isolation" are considered part of the repository, including the waste package and other components and barriers in the system. Such clarification, as in b. above, is necessary to explain the scope of the application of the QA controls.

d. The term "QA controls" should be elaborated to link it to a verification function, audit function or other activity performed by the QA staff or adequately independent entity. In addition it should be noted that the personnel performing the "QA controls" are the same as those performing "QA functions" described in item 1.12. (Note that I do not consider that functions accomplished by the "doers" in normal compliance with procedures subject to QA controls are QA functions.) Alternately, the use of the term "QA function" in item 1.12 could be replaced with the term "QA controls".

5. (2.1 & 2.5) See comment 4b above regarding use of quotation marks around defined terms and elaboration of the meaning of the term "isolation" relative to the time frame that it can be considered to occur.

6. (1.16) An item should be added to address the requirement in Appendix B concerning the independence of the people performing QA functions relative to cost and schedule as opposed to public health and safety considerations. (Here I assume that safety and public health and safety are the same. Again 60.31 is pertinent to confirm this equivalent meaning and should be referenced to highlight the considerations that will be addressed at the hearings.)

end 9/17/86.

7. (Section 3.0 Discussion) This section should be revised to accomplish the following:

a. Include the actual definition of design in the AEA of 1954, and highlight in the discussion that R&D and exploration is covered in the definition.

b. Identify specifically that the QA program applies to the construction of waste packages and other barriers of the engineered barrier system and auxiliary components of the repository system which are not, strictly speaking, barriers. I recommend that it be specifically stated that construction of these items is covered in the applicability (60.151) since these are activities related to the design and characterization of barriers. For example the characterization of the waste packages is most likely to occur during their construction and the monitoring and control of their construction is itself important to properly characterize these components of the repository system.

c. Identify that the NRC equates the term "repository" in NWPA with the term "geological repository" in 60.2. This is important to assure recognition of the intended application of QA to the waste packages and other engineered barriers. These items are not specifically listed in the definition of "geologic repository" but are certainly part of the system intended to be used for disposal. This suggested change will help assure that it is not interpreted by DOE and their contractors that the listing of the 2 items in the definition constitute a complete list of the items making up the system for disposal of wastes.

(I would note that in general where a list is included in a definition to further elaborate the scope of a term which is generally defined, there is danger that the scope of the term will be interpreted to be limited to the items enumerated. This concern applies to the interpretation of 60.150 and 60.151 where lists of activities are included relative to the scope and applicability of QA as well as to the definitions themselves. Section 3.0 should note that the lists included and/or enumerated are not intended to be exhaustive lists.)

8. (2.1) This item suggests that a systems analysis relative to numerical performance standards is required to determine whether or not an item or activity is subject to the QA program requirements. It may not be necessary to compare an item's performance to a standard to determine that it mitigates accidents that could occur or mitigates releases to the accessible environment or beyond the engineered barrier system or the waste package. In this regard the idea that components etc. that mitigate releases or accidents should be covered by the QA program should be added to this paragraph. It may be the case that their importance in achieving the public health and safety goal is minimal, and the level of quality controls is

correspondingly small, but they are still subject to the QA program.

9. (2.5) The use of the term "design" is inconsistent with its definition as a noun--information of a certain sort. I recommend that the word "creating" be place before the word "*design" in this paragraph. The rest of the review plan should be edited to make corrections in this regard.

10. (2.6) This item suggests that only "detailed technical" procedures need meet the criterion of Appendix B. All activities which affect quality are to be controlled by procedures, instructions etc., not just detailed technical procedures. Hence, this item should be revised to eliminate the words "detailed technical procedures". I recommend that the words "other instructions, plans or procedures" be substituted.

11. (2.7) The measures which frequently provide contact with program activities by management per item a. should be documented with corrective actions identified and tracked as is specified for the annual assessment under item b.

12. (section 2) An item should be added which requires identifying the characteristics of items, including design, being produced by procedure and requiring verification. In addition, as activities progress, newly determined verifications should be incorporated into the QA program to accommodate the changing needs of the program. Hence, provisions associated with identifying the current verification should be included in the QA program. An acceptable means of identifying where and when verification will be accomplished would be in connection with the procedure for the activity producing the item or state of being to be verified. (This forces the QA organization's attention to the preparation of procedures for activities affecting health and safety and promotes QA engineering in concert with the normal application of science and engineering.) I note that item 2.5 is ambiguous as to whether it covers verification by independent personnel. I note that verification is a critical function specified by Appendix B and should be addressed in the review plan.

13. (3.1) This item should be expanded to R&D activities and exploration, including the concept of validating design procedures and verifying the validation. What is meant by the term "data" should be added in this item. A specific definition is appropriate. (My comments on design and design validation, design procedures etc. are pertinent background information for this item. They are attached.)

14. (Section 3) A key aspect of design control is to assure that qualified personnel are creating, reviewing and determining appropriate changes to existing design. This is necessary to keep unqualified managers or other personnel from arbitrarily

modifying design or eliminating design created in accordance with procedure by duly authorized personnel. Hence provisions should be identified in the QA program for identifying and making records of all review and verification activities, with identification of all reviewers and verifiers and the comments and changes they originate, whether or not the comments or positively resolved. In other words all review comments either accepted or rejected should be recorded.

The provisions should require identification of all persons creating design as well as those in a review or verification status as noted above. The plan should require the qualifications of all creators, reviewers and verifiers of design to be recorded and available for ready QA review.

Also the provisions should require a signature and date of the creator on records containing design or on some satisfactory record sheet if the design record is not appropriate for a signature. The QA Program should identify the significance of the signature as a testimony to the authority of the cognizant person(s) to create the design, the sufficiency of his qualifications and his assurance of the adequacy/quality of the design created considering the requirements specified for the design.

15. (3.7) The provision which allows a designers supervisor to do verification should be deleted. The exception contradicts the requirement itself. The QA organization should obtain or identify personnel who are qualified to do the verification without using those who contributed to the original design, for example, a supervisor of the designer. The supervisor would not meet the Criterion III of Appendix B.

16. (3.7) The words "including validation activities" should be inserted after the phrase "design activities" in the second line. This is in way of emphasizing that validation requires verification. (Note the purpose of R&D is to validate design procedures for performance assessments and other repository evaluation procedures and test procedures--design procedures.

17. (3.2) Sub-item (a) in this paragraph should add "including those important to safety" after the word "isolation". This makes it clear that the components that are considered important to safety act to inhibit the transport of radioactive materials, consistent with the operative meaning of the term "isolation".

18. (3.2) The design control program should be implemented when design activities start, not at the submission of the Site Characterization Plan. (The current wording suggests that all the design activities, strategy for testing, conceptual design work, etc., do not need design control.) These activities are an integral part of R&D and require control to assure their quality.

19. (3.5) The definition of what constitutes an organization or group for the purpose of interface control is necessary for this item. This item should define a group or organization as the smallest assembly of personnel (one or more) assigned a particular task or tasks for creating design, and supervised by a manager, group leader or other senior coordinator assigned by a higher level manager not directly involved in the initial accomplishment of the task assigned, but which higher level manager may be involved in a review capacity. (The context of interface control is to assure that design work accomplished by qualified individuals is not modified by those who are not qualified and authorized by assignment to accomplish the design work. Hence the assignment and specification of tasks is an important step in defining a group in this context.)

In addition an elaboration of what is meant by interface control is necessary to give this item meaning. The controls are in the form of controlled records which identify current design procedures, test procedures, test plans, or other or detailed valid design, for example design bases, design parameters, data bases, drawings, instructions, calibrations, etc., which may be used by groups, organizations, etc., other than the group or organization that created the particular design in the first place.

20. (3.8) This item should clarify that peer reviews can be used to validate design procedures and test procedures as well as to verify that validation has been accomplished and is of an adequate quality. (In other words, peer review can serve as a check as well as an original validation task, but not at the same time and not without being accomplished by different personnel. Note that validation is a function of the R&D personnel--a doer function.)

end 9/19/86

21. (3.10) This item could be interpreted to apply only to final, Rev. 0, design drawings of hardware which have been released for manufacture. "Original design" is meaningful when considered in this context, which is the commonly used context; however, it is also meaningful when taken in a broader context to mean any design record which is revised, the original record being the "original design".

Thus, I consider the the crux of this item is applicable to all kinds of design throughout its development, not just final design. This item should be expanded to clarify this applicability. For example, design procedures, including test procedures and other instructions which create design, analyses, etc., any of which are modified, corrected or otherwise changed after the cognizant group or individual (see discussion in item 19 above as to what constitutes a group) signs off that it (he) considers the particular design in question complete or "final" for its intended purpose, should only be changed under the same controls which were effective during the design's development.

Such controls, including requirements for specified records of actions by persons or groups, are necessary to assure compliance with the requirement of item 3.3 regarding organizational responsibilities and the general requirement to use qualified personnel in developing design and other quality related activities.

Finally, the term "configuration control system" needs definition, particularly relative to its meaning for design which is not configured on a drawing, i.e., the other forms of design noted above.

22. (6.1) This item should specifically note that design records which have signatures affixed to them indicating completion or authorship, review and/or verification are considered documents to control under Criterion VI of Appendix B. In addition all documents should be retained in a records retention center even if they are changed as a result of comments from reviewers or as a result of corrections which are made by the author(s) or other cognizant group following the initial signing of the record or revision of a particular record.

The intent here is to assure retention of all records and their revisions in order to provide a "paper trail" of the development of design. Such evidence is necessary to provide evidence that the development of design was objective and accomplished by qualified personnel with reviewers contributing as was warranted and verifications being accomplished where called for. Design records, if any, which are not to be retained should be identified. In addition other documents which are not required to be retained should be identified.

23. (6.6) This item should include the requirement that design which requires validation, which is released outside the group or individual who created the design, should be identified and controlled to assure it is not used improperly.

24. (Section 6) Design records which are developed based on existing design records should identify the records which are used as bases, including the date and revision, with a rev. 0 or other acceptable designator for original records.

25. (Section 6) All design records which are completed with a signature indicating completion of some assigned task should be entered in the records center for permanent retention within one week of the date associated with the signature. Comments from reviewers including records of "no comment" should be signed and dated to become a design record and entered into the records center in a similar manner within one week. Original records should be sent to records retention. Only copies should be kept in working files or distributed for review. This assures that originals will not be lost or changed.

When a supervisor or other form of group or individual manager is involved in the development of a design record, such involvement should be identified on the record, and it should not be considered a complete record subject to retention until he has signed it along with the other person(s) contributing to its development. The supervisor should not be allowed to be both a contributor and a reviewer. Procedures for design development should invoke these requirements.

26. (Section 17) This item should clarify that documents covered under Criterion VI are considered records and subject to the requirements of this section. Specifically, records of design should be added to the list of items in 17.1

27. (Section 17) An item should be added that original observations which are recorded by an observer, for example instrument readings or audit observations made during the course of an audit, are considered records for which retention is required. A signature and date/time as appropriate should accompany all such records. Originals should be retained in records retention within 7 days of the observation taking place. If corrections are required to data records because of reviews accomplished after the original record is sent to records retention, a corrected data record with a revision # should be prepared and sent to records retention.

Attachment H

4

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

86-QSB-34

JUL 8 1986

William J. Purcell
Associate Director
for Geologic Repositories
Office of Civilian Radioactive
Waste Management, HQ

COMMENTS ON NRC REVIEW PLAN

References: 1. Memo, Stein/Olson, NRC Review Plan, 10/29/84

2. Memo, Olson/Purcell, BWID Quality Assurance Plan, 4/15/86

3. Memo, Knight/Olson, Request for Comments on NRC Review Plan, 6/5/86

Comments on the NRC Review Plan, Quality Assurance Programs for Site Characterization of High Level Waste Repositories, are enclosed in response to the June 5, 1986, request by J. P. Knight. These recommendations are in addition to the exceptions and clarifications of Appendix A to the Project QA Plan. A copy of Appendix A is also included for information.

The recommended changes are intended to provide for clarification and to address one area in which NRC guidance seems desirable.

Please contact R. P. Saget, 444-7250, if there are questions.

ORIGINAL SIGNED BY
O. L. OLSON

O. L. Olson, Director
Basalt Waste Isolation Division

BWI:CH
80F6.E1

Enclosures

cc: J. P. Knight, RW-24 w/encl.
C. Newton, RW-24 w/encl.
J. Morris, RW-22 w/o encl.

bcc: J. E. Mecca, BWI w/encl.
R. P. Saget, BWI w/encl.
C. W. Higby, MAC w/encl.
BWI Record Copy w/encl.
BWI Rdg. File w/o encl.
MAC Record Copy w/encl.
MAC Rdg. File w/encl.
AMC Rdg File, w/o encl.

office ▶ 6-7334	BWI:MAC	MAC	BWI	BWI	BWI		
SURNAME ▶	Higby:shrl	Rusk	Saget	Mecca	Olson		
	previous	concurrence					
DATE ▶	6-26-86	6-26-86	6-27-86	6-27-86	7/1/86		

COMMENTS ON NRC REVIEW PLAN

The following comments are offerred for consideration in revising the NRC Review Plan.

1. Para. 7.5 - The second sentence is confusing. Consider rephrasing or deleting this sentence to clarify the intent.

2. Para. 3.8 - Consider rephrasing this paragraph as follows for clarification: "Peer review should be utilized as part of the verification process for designs or design activities when judgement or interpretation is the sole criteria available to a reviewer to provide assurance that a final design or design activity is satisfactory. A peer review is an in-depth review performed by more than one individual such that assurance is achieved through the concensus of judgement rather than relying on the judgement of a single individual. A peer reviewer is an individual who is independent of, but is a competent authority in one or more of the disciplines relevant to the subject of the review. Procedures defining the peer reviewer selection process and the process by which peer reviewers conduct their review should be described."

3. Para. 5.1 - Review of procedures and instructions other than those related to data acquisition may be more appropriate under paragraph 6.2 than Section 3 which is primarily related to design activities.

4. The Review Plan is silent on criteria for evaluation of surveillance programs. Consider providing guidance in this area.

Additional clarifications and exceptions are contained in the attached Appendix A to the BWIP Quality Assurance Plan.

Appendix A: Exceptions/Clarifications to the NRC Review Plan

PREAMBLE

The DOE concept of project management for major acquisitions holds contractor technical processes and results to be inseparable from controls under which they are performed. These controls are integrated into an overall quality assurance program. It is essential that management responsibilities and authority relative to implementation of the quality assurance program and verification of its effectiveness be clearly delineated. In particular, it is important to distinguish between direct controls and the "quality assurance functions", as defined in Criterion I of 10 CRF 50 Appendix B; i.,e., "(a) assuring that an appropriate quality assurance program is established and effectively executed and (b) verifying, such as by checking, auditing and inspection, that activities affecting the safety related functions have been correctly performed."

The attached exceptions/clarifications to the NRC Review Plan reflect the following perception of responsibilities:

1. Almost all controls that make up the quality assurance program are exercised by line organizations. Nothing in the working of regulatory requirements or DOE QA program descriptions should give the appearance of relieving the highest line official of responsibility for effective implementation of those controls.

2. The highest ranking DOE QA official on the project should be held accountable for QA functions, as defined in Criterion I of 10 CFR 50 Appendix B. That official should be at a level in the organization that provides sufficient authority so that he or she can deal directly and effectively with the top line official and so that communication concerning status and effectiveness of the QA program produces timely, appropriate line action.

EXCEPTIONS/CLARIFICATIONS TO NRC REVIEW PLAN

1. NRC Review Plan Section 1.1

"The responsibility for the overall program is retained and exercised by the DOE at a level that is commensurate with the level of the DOE official who will submit the license application. While the line organization is responsible for performing quality affecting activities properly, the QA organization shall verify the proper performance of work through implementation of appropriate QA controls."

Clarification

Responsibility for overall QA program policy and direction is exercised by DOE Headquarters and the Office of Geologic Repositories. Within the Basalt Waste Isolation project field office, project management is exercised through DOE Basalt Waste Isolation Division technical staff monitoring (surveillance) and review. Surveillance includes evaluation of contractor technical performance and of the effectiveness of controls under which the work is performed. BWI Division technical staff is normally not involved in direct project work, but exercises technically oriented management functions. Thus, verificaton of proper performance of work is not limited to the DOE "QA organization". However, QA program controls are exercised by line functions.

2. NRC Review Plan, Section 1.5

"Qualified individual(s) or organizational element(s) are identified within DOE's organization as responsible for the quality of the delegated work prior to initiation of activities."

Clarification

Qualified individual(s) or organizational element(s) will be identified within DOE's organization, prior to initiation of activities, as responsible for assuring that delegated work meets established quality standards.

3. NRC Review Plan, Section, 1.10

"DOE and its prime contractor identify a management position within each respective organization that retains overall authority and responsibility for the QA program..."

Clarification

DOE and its prime contractors will identify a management position within each contractor organization that retains overall authority and responsibility for performing the "QA functions" of the QA program. DOE will identify a DOE management position that retains overall authority and responsibility for: (1) performing QA functions relative to direct quality affecting activities within DOE, (2) verifying effectiveness of quality-related controls applicable to quality affecting work performed by DOE personnel, and (3) verifying proper performance of QA functions within contractor QA programs.

4. NRC Review Plan, Section 1.11

"Verification of conformance to established requirements is accomplished by individuals or groups within the QA organization..."

Clarification

DOE verification of conformance to established requirements will be accomplished both by DOE project technical staff, during technical surveillance activities, and by personnel of the DOE QA organization. Contractor verification of conformance to established requirements will be performed by personnel or organizational elements who did not perform the work or directly supervise its performance. Such personnel may belong to the contractor's QA organization or may be assigned on the basis of technical expertise, depending on the nature and complexity of the work whose conformance is being verified.

5. NRC Review Plan, Section 1.15

"The persons responsible for directing and managing the overall QA program are identified ...This [sic] individuals are free from non-QA duties and can thus give full attention to assuring that the QA program is being effectively implemented."

Clarification

The director of the DOE project office responsible for the selected repository program will be responsible for directing and managing line function implementation of the overall QA program. A DOE management level individual in the selected DOE field office will be assigned responsibility for directing and managing QA functions with respect to quality affecting activities performed by DOE personnel and for tracking effective performance of contractor QA functions. This will be a dedicated QA assignment.

Assessment and verification of effectiveness of project QA program controls will be addressed as integral to DOE assessment and verification of contractor technical performance.

Individuals responsible for directing and managing quality assurance functions will be free from non-QA duties and will thus be able to give their full attention to assuring that the QA program is being effectively implemented.

6. NRC Review Plan, Section 3.6

"Procedures require that design drawings, specifications, criteria, and analyses be reviewed by the QA organization to assure that the documents are prepared, reviewed, and approved in accordance with documented procedures and quality assurance requirements."

Clarification

Contractor design control procedures will require that design drawings, specifications, criteria, and analyses be reviewed by the contractor QA organization to assure that the documents are prepared, reviewed, an approved in accordance with documented procedures and quality assurance requirements.

7. NRC Review Plan, Section 9.1

"The criteria for determining those processes that are controlled as special processes are described. As complete a listing as possible of special processes, which are generally those processes where direct inspection is impossible or disadvantageous, is provided."

Clarification

DOE will identify special processes as those processes for which end results cannot be fully characterized by nondestructive means. Contractors will be required to identify and list applicable processes. Geological data acquisition "testing" is not considered to belong to the "special process" category for purposes of process demonstration.

8. NRC Review Plan, Section 11.3

"The potential sources of uncertainty and error in test plans and procedures, and parameters which must be controlled..., are identified."

Clarification

Contractors will be required to perform documented evaluations of uncertainties associated with testing and data acquisition. Potential sources of uncertainties will be identified and quantified to the greatest extent practicable.

9. NRC Review Plan, Section 13.1

"Sampling, handling, preservation..."

Clarification

This requirement is taken to address "Sample handling, preservation..." rather than "Sampling, handling, preservation..."

10. NRC Review Plan, Section 14.1

"Procedures are established to indicate by the use of markings the status of inspections and test on individual items."

Exception

Procedures will be established to assure that inspection, test and operating status is clearly indicated by means of markings, tagging, boundary markers, etc., as appropriate to the nature of the equipment or natural region affected and of the inspection, test or operation involved.

11. NRC Review Plan, Section 16.2

"Corrective action is documented and initiated following a nonconformance to preclude recurrence..."

Exception

Nonconformances that do not meet the criteria for significance (see Review Plan Section 16.4) will be evaluated to determine whether or not action to preclude recurrence would serve the best interests of the project. Evaluation will involve consideration of such factors as cost of remedial action for repetitive occurrence, nuisance value of repetitions, potential impact of repeated occurrences on more significant aspects of the work, potential for repeated occurrences to produce a negative perception of overall control effectiveness and cost to isolate cause(s) and implement preventive action(s).

12. NRC Review Plan, Section 16.4

"Significant conditions adverse to quality, the cause of the conditions, and the corrective action taken to preclude repetition are documented and reported to immediate management and upper of management for review and assessment."

Clarification

Significant conditions adverse to quality, the cause of the conditions, and the corrective action taken to preclude repetition will be documented and reported to immediate management and upper levels of management for review and assessment. Conditions adverse to quality will be considered significant if they are determined to have a potential adverse impact on safety or waste isolation or on the integrity of the record relative to safety or waste isolation.

13. NRC Review Plan, Section 17.1

"The scope of the records program is described. QA records include geotechnical samples and data;..."

Exception

The scope of the records programs is described. QA records include geotechnical data;..." "Geotechnical samples will be afforded archival controls and protection for the period during which additional examination or analysis by DOE or the NRC may be needed, or during which natural time-dependent deterioration processes inherent to the sample materials have not destroyed or substantially changed sample properties."

Attachment I

I

MAY 12 1982

Dr. Franklin E. Coffman
Deputy Assistant Secretary
for Nuclear Waste Management
and Fuel Cycle Programs
U.S. Department of Energy
Washington, DC 20545

Dear Dr. Coffman:

This is in response to the letter from Wade Ballard dated March 22, 1982 requesting estimates of licensing schedules for the first repository. Attached is our current best estimate of the times it will take to conduct each of the steps in the review of the construction authorization application and associated hearings. This is essentially the schedule that was reviewed in a meeting between our staffs on April 19, 1982.

The total estimated time for licensing is three and one-half years. If legislation pending in the Congress (S.1662) passes with the provisions for NRC use, to the extent possible, of DOE NEPA assessments (Section 405(f)(3)) and the DOE does a good job in these assessments, we will be able to reduce this time. We can substantially eliminate the activities shown in the attached sheet under environmental review. With this and the ability to direct freed resources to the safety review, we estimate we may be able to reduce the time of licensing somewhat.

There are several very important assumptions supporting these estimates. First, a high quality and complete license application is assumed. The schedules are based on DOE having completed all of the technical work and testing needed to make the findings required in 10 CFR 60.31. However, as I indicated in my recent letter of April 15, 1982, we are concerned about whether your current plans for underground testing and site characterization will be adequate to result in a complete application.

The second assumption is that there will be a free and open exchange between the DOE and NRC to establish what information will be needed for the license application and that the NRC will be kept abreast of information and data as it is developed at sites being characterized. This is the kind of consultation called for by S.1662 (Section 404 (c)). In light of recent difficulties in scheduling discussions at the BWIP

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Attachment to Enclosure 4

project, we are not confident on this point. For example, since the end of January, we have attempted to followup, within constraints posed by your program responsibilities, on a BWIP project proposal for a series of meetings and workshops on selected, important site issues. Despite many meetings and discussions with DOE headquarters, no progress was made until our meeting on April 27, 1982 when we were given for the first time, a proposed agenda for a meeting during the last week of May. Since then, even these plans have been put off. Because starting such interactions soon is so important to schedule, I think it is essential that we both give this matter our personal support and attention.

Any use of this schedule by the DOE in its planning must include statement of the above assumptions. Until such time as our concerns are resolved, we are not sanguine about the prospects for the sort of orderly licensing proceedings that are depicted in the attached schedules.

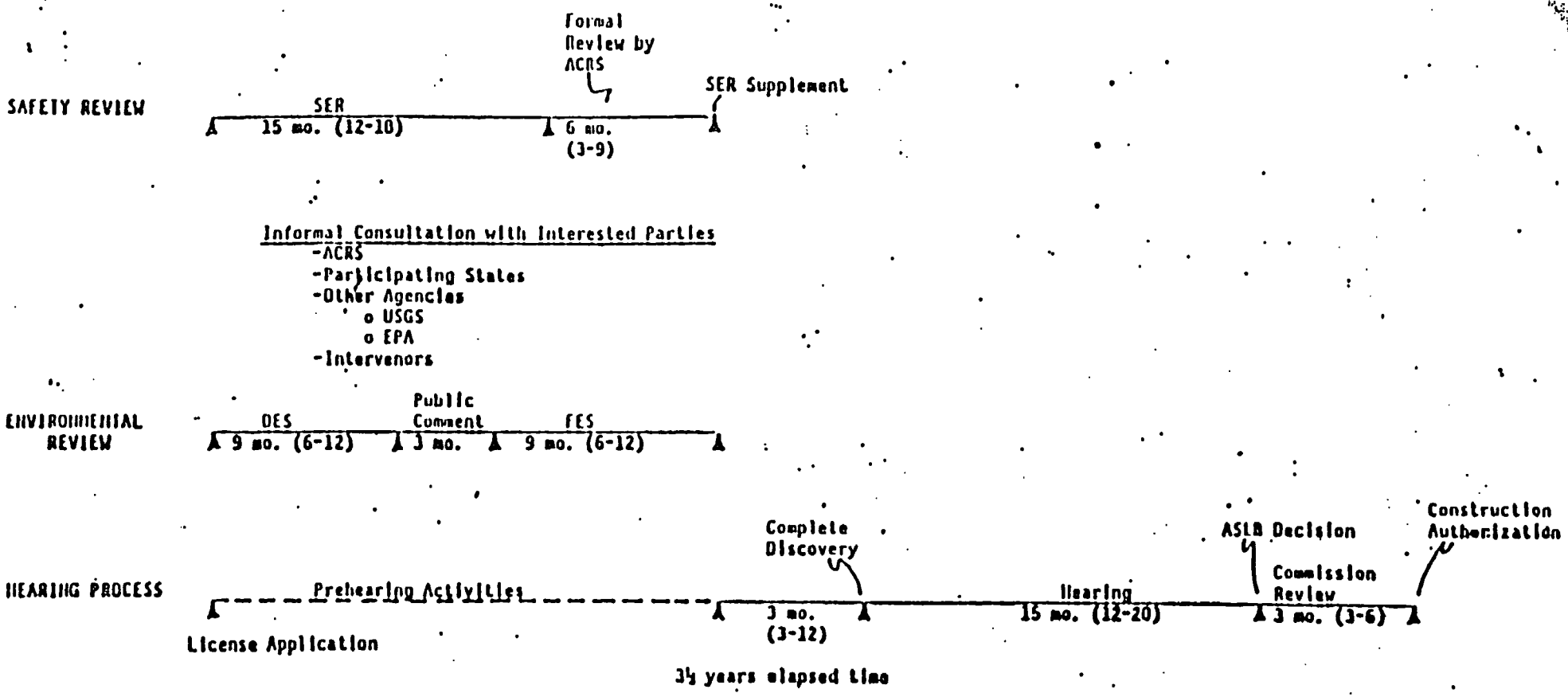
Sincerely,

Original Signed by
John B. Martin

John B. Martin, Director
Division of Waste Management

Enclosure

SCHEDULE ESTIMATES FOR HLW REPOSITORY LICENSING



FOOTNOTES

1. A high quality and complete license application is assumed. All technical work and testing needed to make the finding required in 10 CFR 60.31 are assumed complete.
2. A free and open exchange between the DOE and NRC to establish what information will be needed for the license application and that the NRC will be kept abreast of information and data as it is developed at sites being characterized is assumed.
3. Uncertainties in times are shown in parentheses. Greatest uncertainties are associated with the hearing process.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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October 24, 1985

Mr. Ben C. Rusche, Director
Office of Civilian Radioactive
Waste Management
U.S. Department of Energy
Washington, D.C. 20585

Dear Mr. Rusche:

This responds to your request of July 18, 1985, for the Commission's comments on the Department of Energy's draft Project Decision Schedule (PDS). These comments are based on the Commission's understanding that the PDS is the central organizing document for the Federal agencies involved in the National High Level Waste Program.

As DOE recognizes, the schedules are aggressive ones. The Commission's comments on its activities are directed to an effective and efficient discharge of its responsibilities based on the premise that, in the absence of unresolved safety concerns, and assuming adequate resources, the NRC regulatory program will not delay implementation of the Executive Branch's program as reflected in the DOE Project Decision Schedule. The Commission believes that to accomplish this goal DOE and NRC must cooperate in the following two ways.

First, during the pre-licensing period, the NRC-DOE staff discussions must be effective in identifying major licensing questions and must be scheduled sufficiently early so that NRC comments can be resolved by DOE to the satisfaction of both agencies with enough lead time so as not to delay DOE activities nor the NRC licensing process. Such effectiveness is contingent on DOE identifying where consultation is needed and arranging meetings with us sufficiently early in the planning process so that NRC comments are taken into account in DOE plans and programs before DOE decisions and commitments are made. While the NRC stands ready to meet with DOE, the NRC's ability to interact in a timely manner is dependent on DOE's scheduling such discussions at an early stage. Early planning will assure that NRC comments are received at a time when they can be included in DOE planning in the most efficient manner and also will maximize the time available to agree on a resolution of issues, with minimum impact on DOE schedules.

Second, all activities that might be referenced in licensing must be covered by an acceptable DOE quality assurance program. We are encouraged by commitments made in the Mission Plan to have quality assurance programs in place by the start of site characterization and believe that implementation of such commitments will help ensure that the data on which licensing decisions are

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based are of high quality. NRC is ready to continue its review of DOE's quality assurance programs at the earliest possible stage so that agreed-on quality assurance measures are in place and appropriate at all levels of the DOE program prior to the start of site characterization.

There are two areas that we wish to highlight in these comments.

1. Concerning the timing of the preliminary determination [NWPA Section 114(f)]: As you are aware, the Commission concurrence decision on the siting guidelines reflected an agreement between DOE and NRC that the preliminary determination would be made after site characterization rather than before site characterization, as now indicated in the PDS. However, the Commission has agreed that DOE's modified position does not require any change in NRC's prior concurrence in DOE's siting guidelines. A public statement is currently being prepared to restate the Commission's concurrence.

   Commissioner Asselstine disagrees with the Commission's position on this issue. He believes that DOE must either conform the Project Decision Schedule to the agreement on the timing of the preliminary determination which is contained in the NRC's concurrence decision on the DOE site selection guidelines, or submit for Commission concurrence a formal request to modify the site selection guidelines to incorporate DOE's new position on the timing of the preliminary determination. He will provide further views on this issue in the Commission's public statement.

2. Concerning DOE's 9-month reduction in the statutory duration of the NRC review of the repository license application: The NRC is committed to making the licensing review as efficient as possible. However, the Commission continues to believe that the three year period provided by the NWPA is a very optimistic estimate for the time required to reach a licensing decision on repository construction. The adequacy of a 36-month review period is dependent on the submittal by DOE of a complete and high-quality application for a repository license. Meeting this review schedule might be possible if DOE completes, in a timely and exemplary fashion, the following key actions: (1) lay out a systematic set of milestones requiring consultation with NRC staff on site characterization issues; (2) develop an information retrieval system to allow easy access to documents which support the license application; (3) implement an effective quality assurance program at an early stage; (4) adopt a conservative approach in the treatment of uncertainties in geotechnical investigations; (5) establish design parameters for the repository at an early date; and (6) resolve State and Indian tribe contentions at an early stage in order to minimize the NRC hearing requirements. Such measures have already been identified and discussed by NRC and DOE staff as

necessary requirements to meet the 36-month schedule. We believe that the last item is of critical importance and should receive careful and thorough attention.

We suggest that both NRC and DOE continue their efforts to identify and implement ways to help make the license process more efficient. Should DOE identify additional measures to facilitate the licensing process, NRC will consider them and seek ways to shorten the Construction Authorization review process while still fulfilling its responsibility to protect the public health and safety. NRC will continue to seek a more precise estimate for the Construction Authorization review period and to identify measures that can facilitate a timely closure of Commission licensing proceedings.

Until it is clearly demonstrated that the licensing process can be shortened, the Commission believes the Project Decision Schedule should be revised to reflect 36 months for licensing review.

We have noted the new requirement for the review of the statutes, regulations, and permits that are listed in Section 10. The staff will provide the requested report covering those statutes, regulations, and permits under our purview by the end of the year.

In view of the applicable regulations of the Council on Environmental Quality, we believe it would be desirable to have an early determination of the scope of the issues that will be addressed in the environmental impact statement prepared in connection with repository construction. In our detailed comments, we recommend that DOE add a milestone for this activity near the beginning of site characterization.

DOE should note that for several key events our comments provide additional time for Commission involvement, which includes possible involvement of an oversight group such as the Advisory Committee on Reactor Safeguards. Also, our comments provide for additional turnaround time in several key milestones for consultation with host States and affected Indian tribes.

We appreciate the opportunity to contribute to the development of the Project Decision Schedule, and we hope you find these comments useful.

Sincerely,

/s/

Nunzio J. Palladino

Attachment:
As Stated

Attachment J

Rdg J

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

August 29, 1986

Mr. O. L. Olson
Director, Basalt Waste Isolation Division
Office of Assistant Manager for Commercial Nuclear Waste
Richland Operations Office
U.S. Department of Energy
P.O. Box 550
Richland, Wa. 99352

Dear Mr. Olson:

Consistent with the provisions of Appendix 7 of the Site Specific Agreement between DOE and NRC, I am notifying you of H. Lefevre's, K. McConnell's and M. Blackford's assignment to this office during the week of September 7, 1986 to review various areas regarding the site's geology. Their clearances to the site are being requested via separate correspondence through Security.

It is requested that RHO/DOE information (data, including field maps, drilling records, geophysical data etc., and analyses or interpretations and draft study plans or other pertinent past or current planning) from working files or permanent records be made available to myself and the other NRC personnel for review but not retention in the following areas of interest:

1. The May Junction Monocline (fault).
2. Gable Butte Structure.
3. Fault south of Gable Mountain revealed in DB-10 core.
4. The Yakima hydrologic barrier.
5. Luna Butte/Arlington Oregon structure recently investigated by T. L. Tolan of the RHO staff.
6. Micro earthquakes recorded on RHO's seismic network (here maps of epicenters and fault plane analyses are of interest).
7. Cores from RRL-2A and RRL-17 (here core logs and core photographs, as well as, the cores themselves are of interest for review).
8. Seismic capability of faults and folds in structures which may affect the repository, including the Rattlesnake Mountain, Yakima Ridge, Gable Mountain, May Junction Monocline, Toppenish Ridge, Untanum Ridge, Gable Butte, Yakima Hydrologic Barrier and fracture zones associated with the micro earthquakes in the area.

In addition to making the information available it is requested that at least one cognizant RHO person be available for about 1 hour on each of the 8 areas listed above for discussion of the

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available information and pertinent planning for future data collection and evaluations in the respective areas of interest.

One activity which we plan to accomplish during the week is to visit some of the structures noted above and make field observations. W. Kiel of the Supply System Staff is planning to accompany us on these field trips. We also would welcome a RHO geologist to accompany us.

We would expect to discuss our observations with you and other cognizant project personnel as appropriate, prior to the visitors leaving Richland, consistent with this Office's basic objective of providing early feedback of OR staff observations.

Sincerely,

/s/

F. Robert Cook
Senior On-Site Licensing
Representative, BWIP
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

DISTRIBUTION: Letter, Cook to Olson of August 29, 1985.

J. Mecca, DOE/RL	D. Dalhem, DOE/RL
J. Knight, DOE/HDQRTS	G. W. Jackson RHO
R. E. Browning, NRC	L. Connell, RHO
J. Linehan, NRC	J. Graham, RHO
P. Justus NRC	R. May, RHO
H. Lefevre, NRC	T. Curran, RHO

Attachment K

15

UPPER COLD CREEK SYNCLINE HYDROLOGIC BARRIER --CURRENT KNOWLEDGE AND CHARACTERIZATION PLANS-- NOVEMBER 1984

INTRODUCTION

A substantial hydraulic head difference exists between wells in the western Cold Creek Valley and wells east of the Yakima Barricade (Figure 1). This head difference indicates the presence of a hydrologic barrier, trending north-south, within a two mile wide corridor between boreholes DB-11 (relatively high heads) and DC-22C (relatively low heads). The primary evidence is from wells completed within the Priest Rapids interflow. There is also an indication from well DB-11 that a significant hydraulic head difference occurs in the Mabton interbed (Figures 1 and 2). Data from the McGee well suggest a hydraulic head differential of smaller, but significant, magnitude also occurs in the deeper Grande Ronde Basalts. Understanding the nature of the upper Cold Creek syncline hydrologic barrier, previously referred to as the Yakima Barricade hydrologic barrier and the Cold Creek "barrier", is important due to its potential for affecting the present and future groundwater flow regime in the Reference Repository Location (RRL). This paper summarizes the Basalt Waste Isolation Project's (BWIP's) current knowledge and plans for additional characterization of the upper Cold Creek syncline hydrologic barrier.

CURRENT KNOWLEDGE

R. C. Newcomb (1959, 1961, and 1972) discussed the occurrence of hydrologic barriers in the Columbia River basalts of Washington, Oregon, and Idaho. In 1959, he discussed two types of "structural barriers" known to impede the lateral movement of groundwater in the Columbia River basalts. They were sharp-fold and fault-controlled barriers. In 1961, he discussed the occurrence of "structural barriers" at several localities in Washington, Oregon, and Idaho. He specifically reviewed the presence of a subsurface barrier to groundwater flow in the basalts of the upper Cold Creek syncline. Furthermore, he suggested the barrier was of the fault or sharp-fold type. In 1972, he made further observations on the nature of the hydrologic barrier in the upper Cold Creek syncline. BWIP initiated geophysical reconnaissance surveys to investigate this subsurface hydrologic barrier further.

In 1981, two geophysical surveys (ground gravity and ground magnetics) were conducted to determine if the location of any such potential "structural barriers" could be defined. Survey results show the ground gravity gradient steepens about 2500 feet east of DB-11. This north-south trending gravity gradient is traceable for about one mile to the north and south of DB-11.

The gravity gradient corresponds to a north-south trending magnetic gradient indicated by total field ground magnetic data and aeromagnetic data (Holmes and Mitchell, 1981). Reconnaissance seismic reflection data (Berkman, 1983) show a rise in a reflecting horizon which coincides with the sharp change in the horizontal gravity and magnetic gradients.

In 1982, the hydrologic characteristics (transmissivity, storativity, and hydrochemistry) of the Priest Rapids interflow were determined with a constant-discharge aquifer test using the McGee well as the pumping well and borehole DB-11 as an observation well. The results of this test indicate a hydrogeologic boundary (upper Cold Creek syncline hydrologic barrier) may be coincident with the geophysical gradients discussed above. However, a single pump test is only capable of delineating the distance between the pumping well and a hydrologic boundary. The distance from the pumping well to the boundary is interpreted as a radius, but the direction to the boundary cannot be ascertained. Multiple pumping and observation wells are required to locate and delineate the boundary.

In 1983, coreholes DH-27 and DH-28 (Figure 1) were drilled to provide an initial evaluation of the geophysical gradients described above. DH-27, located on the west side of the geophysical gradients, is 2330 feet due west of DH-28 which is located on the east side of the gradients. Both coreholes bottom in the Pomona Member of the Saddle Mountains Basalt. The top of the Pomona is 400 feet higher in corehole DH-27 than in corehole DH-28. Figure 3 shows the stratigraphic relationship in the two coreholes and two possible structural interpretations; monocline or fault, Figures 3A and 3B, respectively. Other conceptual interpretations, such as a sediment-filled subsurface paleochannel in the basalts, have been evaluated and ruled out as a possible explanation based on the data available. Available data suggest a relationship between the geophysical gradients and a structure. However, additional data are needed to establish a relationship between this structure and the upper Cold Creek syncline hydrologic barrier.

Chemical analyses of groundwater samples taken from boreholes (RRL-2A, DC-16, and McGee well) on either side of the upper Cold Cold Creek syncline hydrologic barrier suggest steep, lateral hydrochemical gradients exist in the vicinity of the barrier. In general, groundwaters to the east of the barrier have much higher concentrations of certain chemical constituents (sodium, chloride, fluoride, delta-oxygen-18, and delta-hydrogen-2) in comparison to those to the west. This hydrochemical feature is observed for groundwaters from the Wanapum and upper Grande Ronde Basalts.

A repository in the RRL may be influenced by the effects of this hydrologic barrier. A possible effect is its potential for retarding groundwater flow from the west. This may cause relatively stagnant groundwater conditions east of the barrier resulting in longer groundwater travel times under natural

gradients. If the barrier is fault induced, future movement along such a postulated fault may change the hydrological characteristics of the fault, which could alter the groundwater flow characteristics within the RRL. In addition, the potential seismic effect of such a fault would need to be factored into the seismic design of the proposed repository.

PLANS

The studies will explain the relationship between the upper Cold Creek syncline hydrologic barrier and the geophysical gradients, determine their present geologic and hydrologic characteristics, and assess future geologic and hydrologic characteristics. Accomplishment of these overall objectives will proceed in a stepwise manner, contingent upon the results of field and modeling studies initiated in FY85. Specific objectives for FY85 studies are summarized in Table 1, along with the work needed to accomplish these objectives. A schedule for completion of FY85 work is shown in Figure 4. More details of the studies will be included in the Geosciences Plan and the Site Characterization Plan.

Figure 5 shows the location of previous geophysical surveys and Figure 6 shows the location of surveys planned for FY85. The gravity and magnetic surveys will be conducted to accomplish FY85 objective 1 (Table 1); determine the north-south extension of the geophysical gradients. If the outcome of a seismic testing and verification study is successful, a seismic reflection survey will be conducted to accomplish FY85 objective 2 (Table 1); site localities for coreholes needed to further evaluate the structure defined by coreholes DH-27 and DH-28. Geophysical data will also be used to site additional geologic and hydrologic boreholes based on a definition of the northern and southern extent of the geophysical gradients.

To accomplish objective 3 (Table 1), the FY85 program will deepen DH-27 and DH-28 through the Selah interbed (Figure 2) and piezometers will be installed to obtain head measurements and water samples for chemical analyses in this interbed. This program will obtain additional stratigraphic data across the geophysical gradients and obtain hydraulic head information and hydrochemical data in the Selah interbed. If a significant head difference is present, this information will help refine the location of the hydrologic barrier. Coreholes DH-27 and DH-28 will not be deepened to the Priest Rapids interflow, where hydraulic heads could be compared to existing data. Priest Rapids interflow observation and/or pumping wells, if needed for hydrologic testing, would require new starter holes to ensure the hydrologic integrity of the boreholes. The consensus is that DH-27 and DH-28 would not be suitable for hydrologic testing purposes in the Priest Rapids.

General plans for out years are shown in Table 2. The implementation of these plans, particularly in the area of hydrologic testing, is not yet firm. It is the current intent to

update the plans outlined in Table 2 as decisions regarding hydrologic testing strategy are made and FY85 study results are analyzed (objective 4, Table 1).

REFERENCES

Berkman, E, 1983, Reprocessing and interpretation of seismic reflection data Hanford site, Pasco Basin, south central Washington: SD-BWI-TI-177, Rockwell Hanford Operations, Richland, Washington, 74 p.

Holmes, G. E. and Mitchell, T. H., Seismic reflection and multilevel aeromagnetic surveys in Cold Creek syncline area: in Meyers, C. W. and Price, S. M., eds., Subsurface geology of the Cold Creek syncline, RHO-BWI-ST-14, Rockwell Hanford Operations, Richland, Washington, p. B-1 through B-56.

Newcomb, R. C., 1959, Some preliminary notes on ground water in the Columbia River Basalt: Northwest Sci., v. 33, no. 1, p. 1-18.

Newcomb, R. C., 1961, Storage of ground water behind subsurface dams in the Columbia River Basalt, Washington, Oregon, Idaho: U. S. Geol. Survey Prof. Paper 383-A, 15 p., 12 illus. (1962).

Newcomb, R. C., Strand, J. R., and Frank, F. J., 1972, Geology and ground-water characteristics of the Hanford Reservation of the U. S. Atomic Energy Commission, Washington: U. S. Geol. Survey Prof. Paper 717, 78 p., 11 illus.

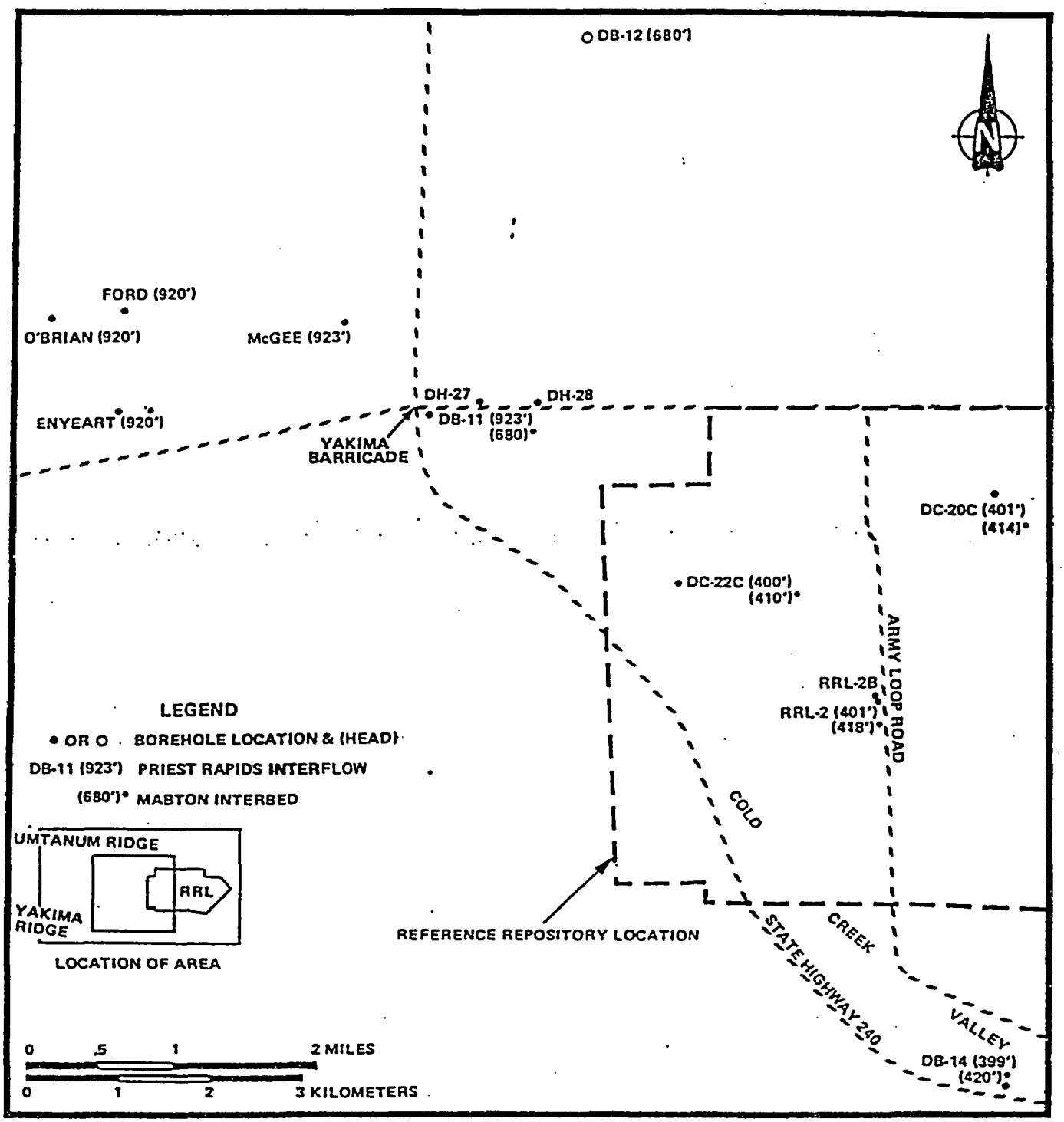


FIGURE 1

Hydraulic Heads in the Priest Rapids Interflow and Mabton Interbed

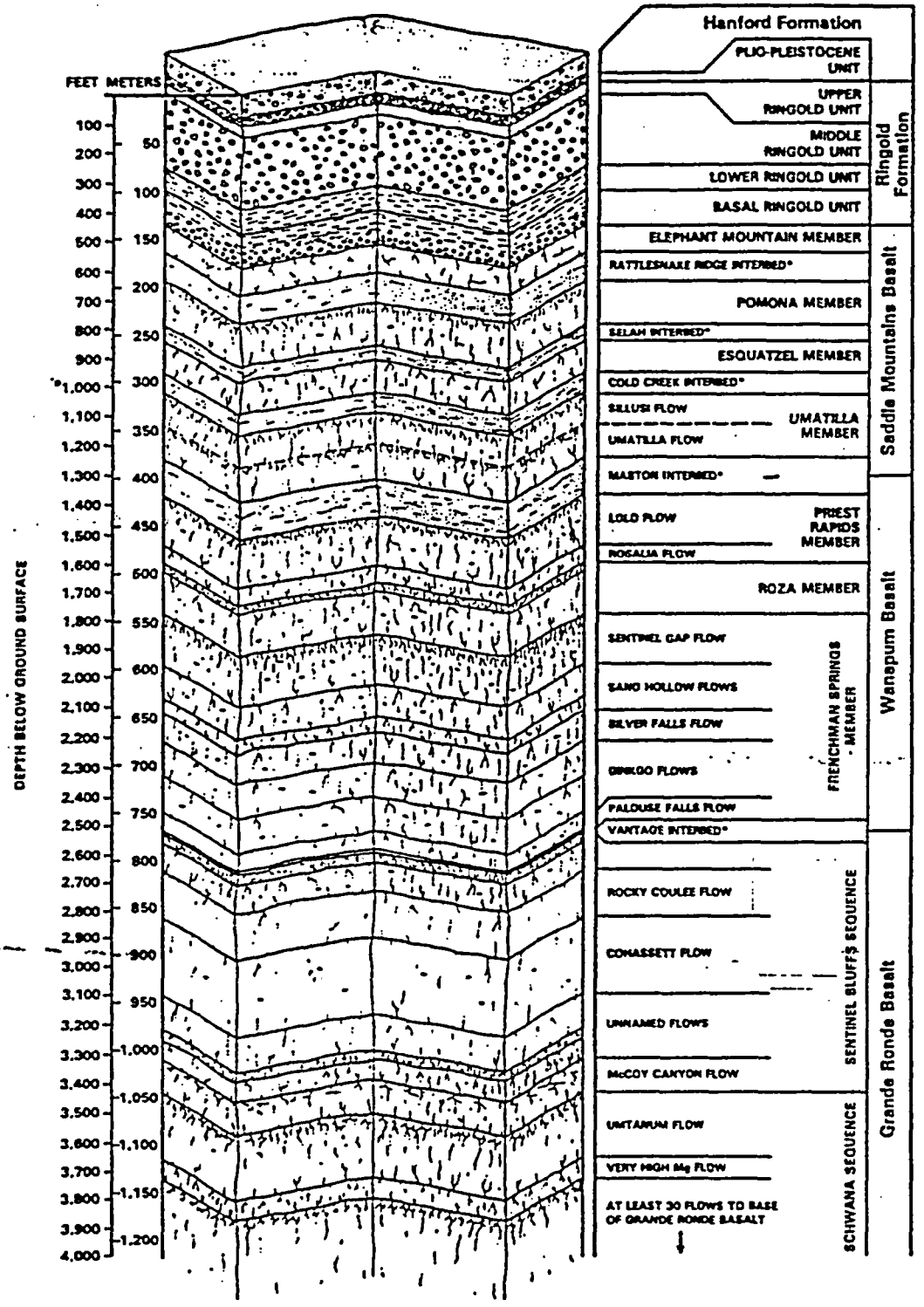
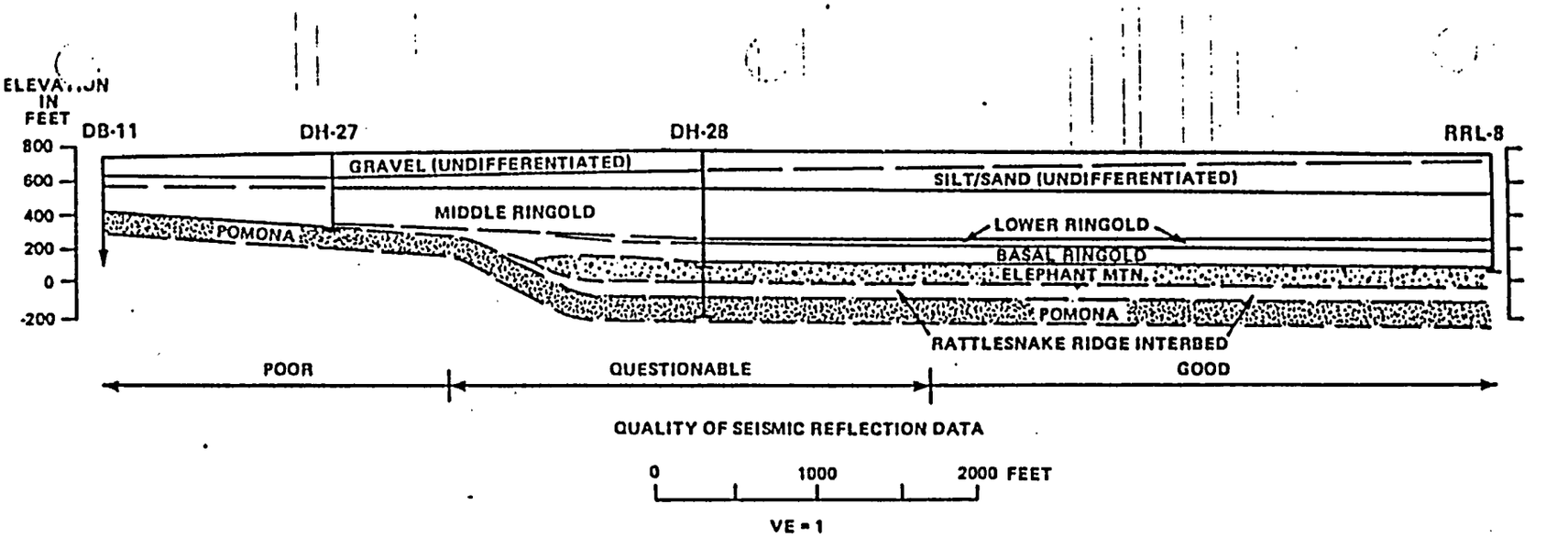
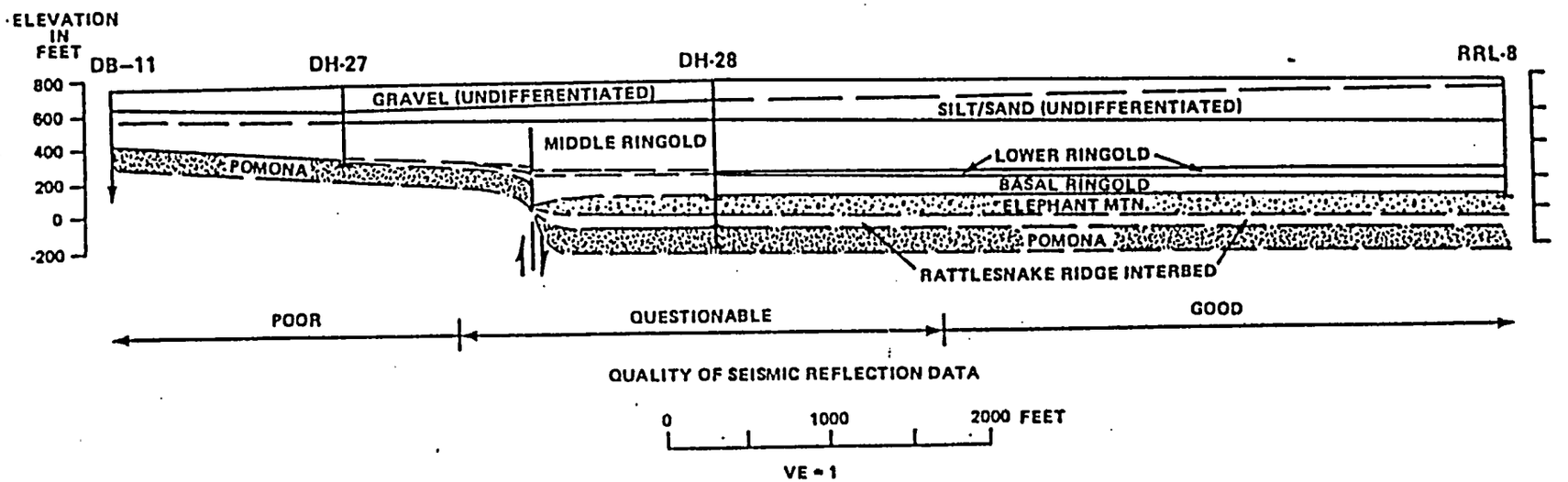


FIGURE 2

Stratigraphy of Columbia River Basalts



A - Monocline Interpretation



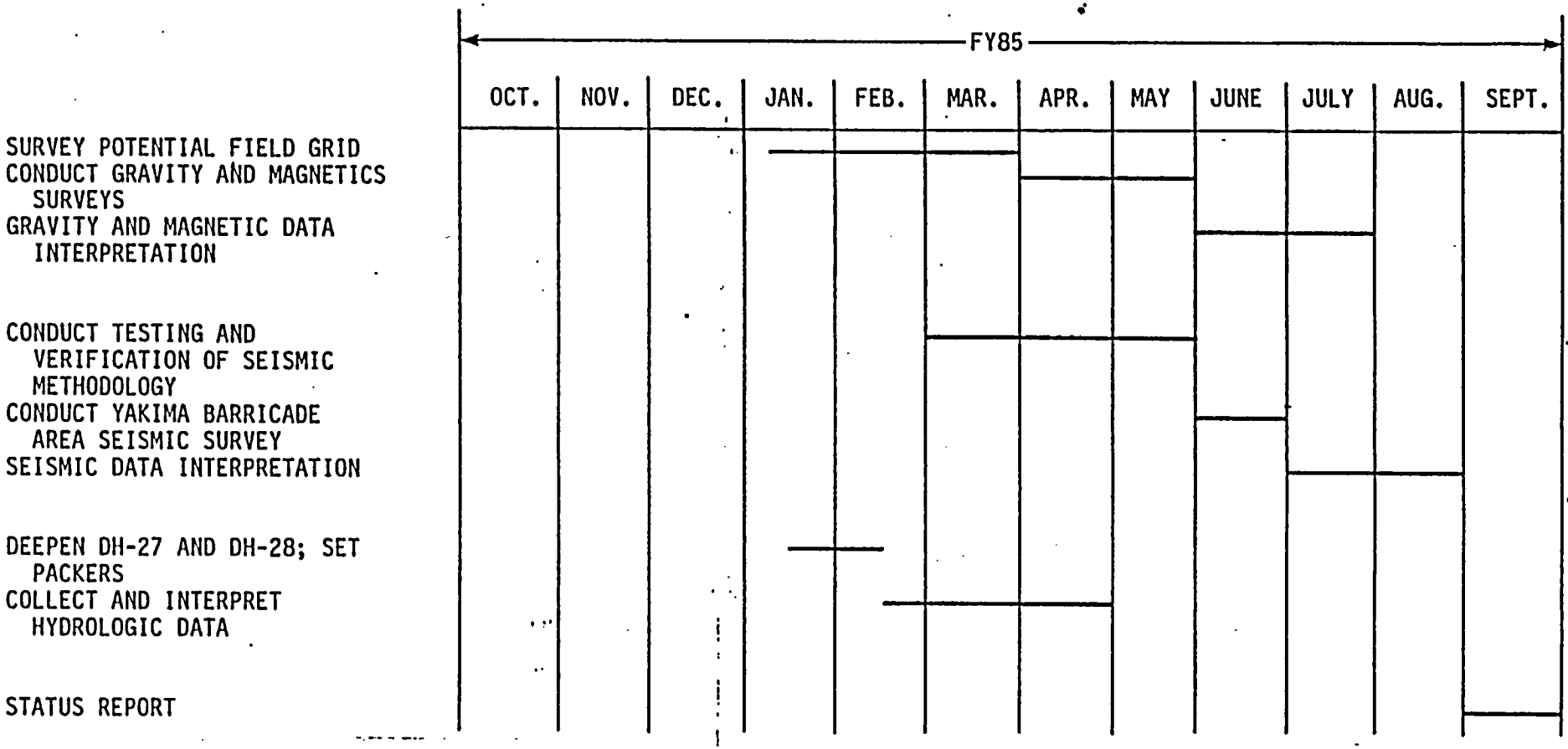
B - Fault Interpretation

FIGURE 3

Possible Structural Interpretations
from Coreholes DH-27 and DH-28

FIGURE 4

FY85 SCHEDULE FOR UPPER COLD CREEK SYNCLINE
HYDROLOGIC BARRIER STUDY



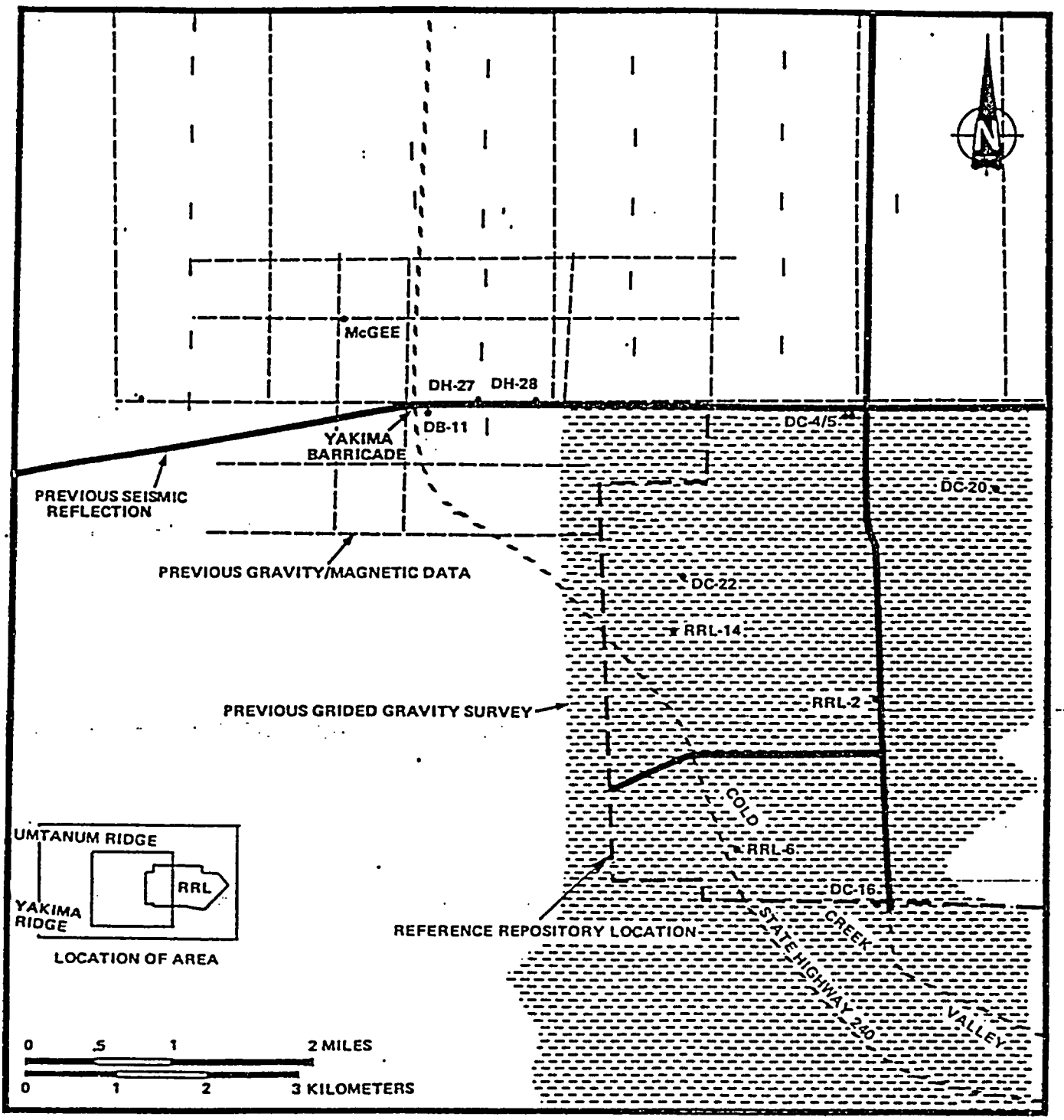


FIGURE 5

Previous Geophysical Surveys

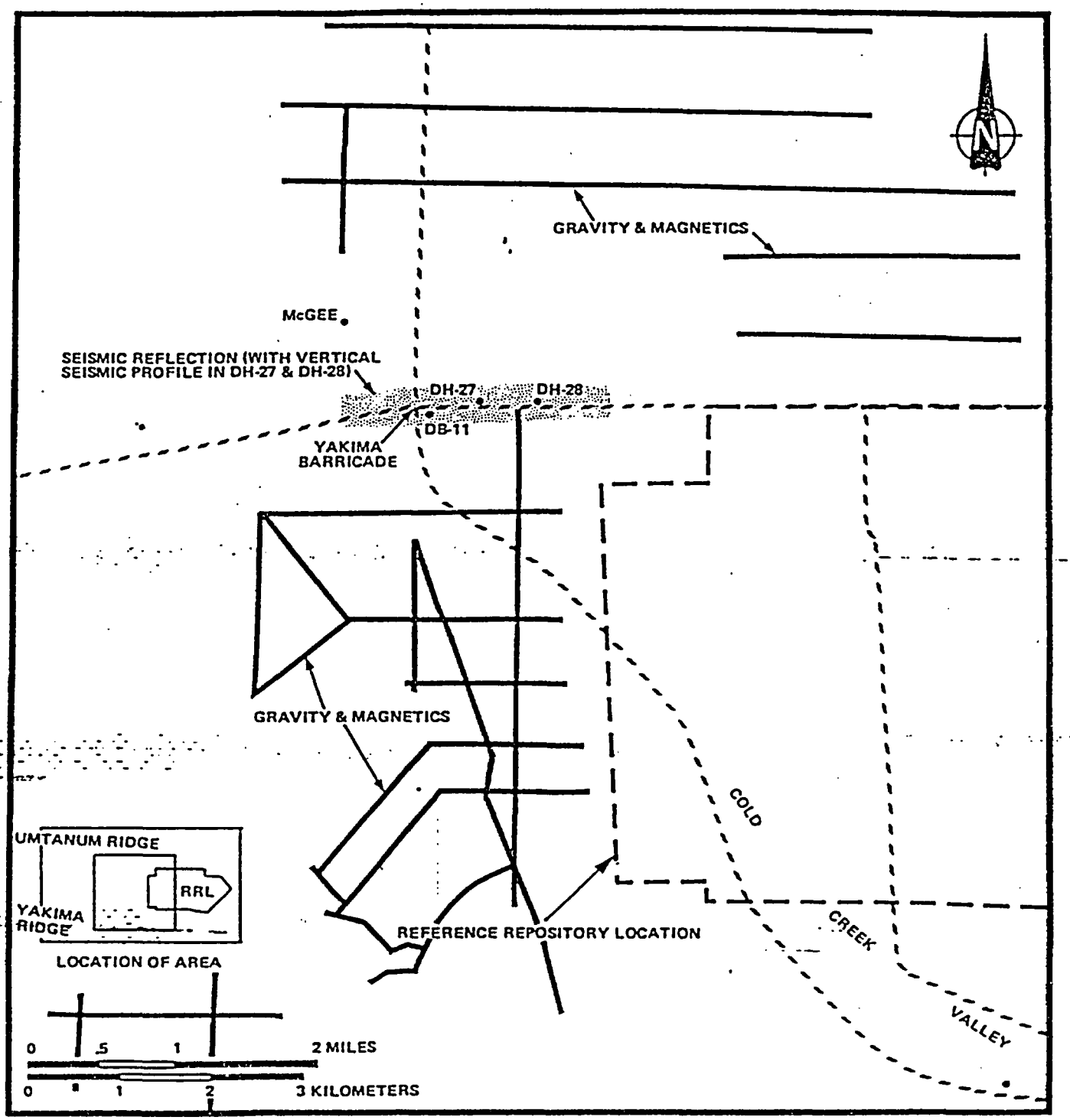


FIGURE 6

Planned Geophysical Surveys for FY85

TABLE 1

FY85 OBJECTIVES AND PLANS

OBJECTIVES	PLANS
1. Determine the northern and southern extent of geophysical gradients (gravity and magnetics).	Conduct 50 line miles of both gravity and magnetic surveys.
2. Refine location of geophysical gradients and geologic interpretation with seismic reflection data.	Conduct testing and verification of seismic methodology. Conduct one to three lines of seismic reflection in Yakima Barricade area (dependent on testing).
3. Refine the location of the hydrologic barrier on the basis of hydraulic head observations within the Selah interbed at DH-27 and DH-28.	Deepen DH-27 and DH-28 through the Selah interbed. Install packers and piezometers in DH-27 and DH-28 to obtain head differences in the Selah interbed and obtain water samples for chemical analyses.
4. Documentation of results.	Compile status report and update FY86 plans.

TABLE 2

OVERALL OBJECTIVES AND GENERAL PLANS FOR FY86+

OBJECTIVES	PLANS
1. Determine location and dimensions of hydrologic barrier.	Locate and drill 3 wells into the Priest Rapids for constant discharge pumping tests and hydrochemical analyses. Assess need for additional wells for constant discharge pumping tests on basis of initial tests. Assess need for additional geophysics and seismic data on basis of initial tests.
2. Determine present geologic and hydrologic characteristics.	Assess structure through borehole verification A. Structure Verification 1 to 3 boreholes to a maximum depth of 1500 feet B. Age Determination of Last Activity 2-10 closely spaced boreholes through sediments Assess hydraulic properties of the structure through additional hydrologic testing at different scales.
3. Determine future geologic and hydrologic characteristics.	Develop conceptual and numerical models.
4. Documentation of Results	Compile status reports and update plans; compile final report.

Attachment L

Defense Software Configuration Management (CM)

Implementing the New DoD CM Standards

August 18-22, 1986

Defense Software Quality Assurance (QA)

Implementing the New DoD QA Standards

August 25-29, 1986

The University of Maryland University College
Professional and Career Development Program

Defense Software Configuration Management

Implementing the New DoD CM Standards

Overview

The new DoD standards for configuration management of software are more demanding and definitive than ever before. Thus, understanding the new requirements and their effects on the software contracting industry are a paramount concern. Contractors, especially, must be aware of the nature and far-reaching implications of these new standards, as they will be required to implement them on future contracts. And, contractors and customers alike must realize the requirements and their impact in order to work efficiently as a team.

For contractors, a thorough understanding of these requirements, and how to implement them, means keeping up with the competition. For customers, it means managing projects and monitoring contractors more effectively. For all concerned professionals, knowledge and implementation of the new DoD standards for SCM means more reliable, high-quality systems and software.

This five-day course takes you through the standards step-by-step, from understanding the rationale behind them, to their implementation. You will also participate in special workshop sessions, where you will write key portions of the SCM plan using the new SCM plan documentation standard.

If you are a hardware or software manager, practitioner, contractor or support staff member dealing with CM efforts, you can't afford to miss this comprehensive course for analysis and implementation of the new DoD SCM standards!

Highlights

- Analyze DoD policy, procedures, and guidelines for configuration identification, change control, status accounting, and configuration audits of software.
- Investigate and implement the new SCM requirements of revised MIL-STDs-483A, 490A and 1521B.
- Discover the new definition of software and computer software configuration item (CSCI).
- Learn DoD-STD-2167 requirements for the software development cycle during production and deployment, and the implications for SCM.
- Examine the implications of the new phasing requirement for establishing the software allocated baseline at the Software Specification Review.
- Analyze the new software specification standards and their relationship to MIL-STDs-490A and 483A.
- Explore the distinctions between CM of software, software designated as a configuration item, firmware, non-deliverable development support software, and commercially available software.
- Learn the impact of the new definitions of Class I and Class II software changes.
- Discover how to use the new one-step and two-step software engineering change proposals.
- Master reporting Class II software changes using the new Software Problem/Change Report.
- Investigate the requirements and implications of the new Developmental Configuration and phasing of internal baselines.
- Predict software support phase change levels required by DoD-STD-2167.
- Analyze the impact of inadequate SCM on system/software readiness, reliability, and quality.

Handout Documents

- DoD-STD-2167, "Defense System Software Development," 4 June 1985.
- MIL-STD-483A, "Configuration Management Practices for Systems, Equipments, Munitions, and Computer Software," 4 June 1985.
- MIL-STD-1521B, "Technical Reviews and Audits for Systems, Equipments, and Computer Software," 4 June 1985.
- MIL-STD-490A, "Specification Practices," 4 June 1985.
- DoD-STD-480A, "Configuration Control—Engineering Changes, Deviations, and Waivers," 29 December 1978.
- Joint DoD Regulation, "Configuration Management," 1 July 1974.
- Selected new documentation standards (Data Item Descriptions) related to DoD-STDs-2167 and 1467.

Defense Software Configuration Management

Agenda

August 18

- Introduction
- Software Configuration Management During Development and Support: Lessons Learned
- Overview of New SCM Requirements of DoD-STD-2167 and Revised MIL-STDs-483A, 490A and 1521B
- Overview of Defense System Life Cycle
- Software Development and Support Life Cycle Details and Relation to SCM

August 19

- Software Configuration Management Basic Concepts
- Relation of Engineering Reviews to SCM (System Design Review [SDR], Software Specification Review [SSR], Preliminary Design Review [PDR], Critical Design Review [CDR], Test Readiness Review [TRR])
- SCM Work Tasks, Plan and Procedures
- Configuration Identification
- Software Specifications as Configuration Identification Documentation
- Identification Numbering and Marking of Software, Specifications and Changes During Development, Production and Support
- Engineering Release of Software, Specifications and Changes During Development, Production and Support

August 20

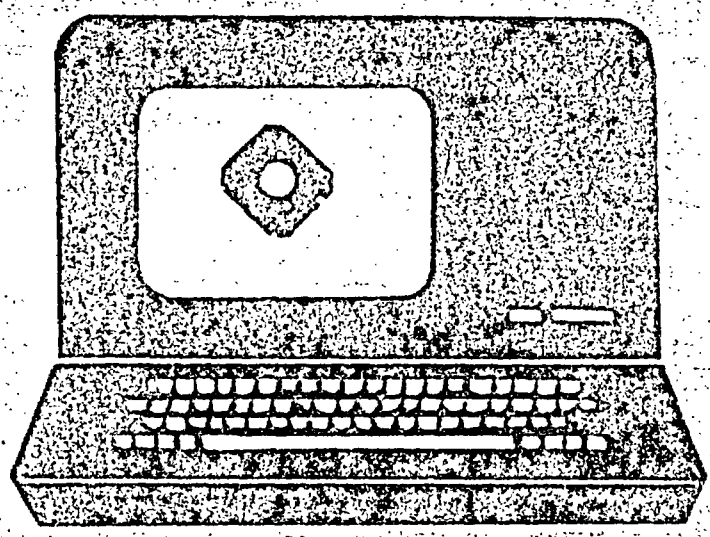
- Drafting Portions of the SCM Plan
- Configuration Change Control During Development, Production and Support
- Control of Government Baselines (Allocated and Product)
- Configuration Control Boards
- Preparing and Processing Software Engineering Change Proposals (ECPs) to Government Baselines

August 21

- Preparing and Processing Change Requests To Contractor—Internal Baselines
- Control of Development Support Software Changes
- Estimating Support Phase Change Loading
- Drafting Portions of the SCM Plan

August 22

- Configuration Status Accounting During Development, Production and Support
- Status Accounting of Government vs. Contractor-Internal Baselines
- Version Description Documents, Configuration Indexes/Lists, Software Change Reports, and Other Records/Reports
- Drafting Portions of the SCM Plan
- Functional and Physical Configuration Audits
- Relation of Audits to Establishment of Product Baseline
- Applicability of Audits to Corrections and Modifications During Production and Support



Defense Software Quality Assurance (QA)

Implementing the New DoD QA Standards

Overview

The new and revised DoD standards will have far-reaching implications for managing, developing, and supporting defense system software on future contracts. Professionals in the industry must discover how the new DoD-wide software standard (DoD-STD-2167), its 24 associated new documentation standards (Data Item Descriptions), and revised MIL-STDs-483A, 490A, and 1521B will impact them and their quality assurance functions. The new requirements for software quality evaluation in DoD-STD-2167 are more comprehensive, specific, and demanding, in many respects, than those in MIL-S-52779A and DoD-STD-1679A.

Quality assurance managers and technical staff must learn the requirements and implications of these software development and support standards. They must also master planning, managing, and performing quality assurance/evaluation in this new environment to ensure conformance to the new requirements for software development and support.

The new Software Quality Evaluation (SQE) standards and requirements will affect customers, contractors, and subcontractors over the full system/software life cycle, from development through production and support, including software maintenance, modification and correction.

You will obtain an understanding of the new DoD standards for Software Quality Evaluation in this five-day course. You will gain the materials and knowledge you need to plan, develop, manage, and implement an effective SQE effort to meet the new DoD requirements. You will also write key portions of the Software Quality Evaluation Plan, using the new SQE Plan documentation standard, during special workshops sessions. And, you can pass on your understanding of the new SQE and its implementation to other staff members in your organization.

Highlights

- Analyze the major differences between the Software Quality Evaluation (SQE) requirements of DoD-STD-2167 and the SQA requirements of DoD-STD-1679A and MIL-S-52779A.
- Evaluate how the new DoD software standards change and SQE standards will impact your company and its software Quality Assurance/Evaluation efforts.
- Implement the requirements of the new Software Specification Review (SSR), and Test Readiness Review (TRR), and discover the implications for the government, the contractor, and software.
- Discover the new position on the degree of independence in performing software quality evaluation.
- Learn about the new requirements related to software acceptance inspection, acceptance criteria, and certification of compliance.
- Evaluate the impact of the new requirement for recording the analysis of cost to detect and correct errors.
- Examine the requirements for the contractor's Software Standards and Procedures Manual.
- Explore the new standard evaluation criteria for software documentation, including specs, plans, manuals, activities, tools, methodologies, and procedures.
- Investigate the new default standards for design and coding and their impact on contractors and government.
- Learn about internal in-process reviews during each phase of the software development cycle.
- Analyze the impact of the new requirement for correction of defects during each software development phase.
- Master the requirement for quality evaluation of commercially available, reusable, and Government-furnished software.
- Evaluate the new requirements for software testing, and test documentation, including levels, methods, classes, and more. Compare these with the DoD-STD-1679A requirements.

Handout Documents

- DoD-STD-2167, "Defense System Software Development," 4 June 1985.
- MIL-STD-1521B, "Technical Reviews and Audits for Systems, Equipments, and Computer Software," 4 June 1985.
- DoD-STD-2168 (Draft), "Software Quality Evaluation."
- MIL-S-52779A, "Software Quality Assurance Program Requirements," 1 August 1979.
- MIL-STD-483A, "Configuration Management Practices for Systems, Equipments, Munitions, and Computer Software," 4 June 1985.
- MIL-STD-490A, "Specification Practices," 4 June 1985.
- New documentation standards (Data Item Descriptions) related to DoD-STD-2167, including for the Software Quality Evaluation Plan.

Defense Software Quality Assurance

Agenda

August 25

Introduction

- Software Quality Assurance During Development and Support: Lessons Learned
- Overview of New Software Quality Evaluation (SQE) Requirements of DoD-STD-2167 and Draft DoD-STD-2168

Defense System Life Cycle

- Overview of the System Life Cycle
- Details of the Software Development and Support Life Cycle and Relation to SQE

Software Quality Evaluation Basic Concepts

- The New Software Quality Factors (Correctness, Reliability, Maintainability, etc.)
- Defects, Failures and Quality Metrics
- Overview of Software Specification Standards

August 26

Software Quality Evaluation Work Tasks, Plan and Procedures

- Corrective Action System
- Quality Records, Reports and Cost Data
- Warranty
- Projecting Quality and Reliability
- Standard SQE Requirements for All Software Phases
- Standard Evaluation Criteria

Software Requirements Analysis Phase

- Performing SQE Related to Software Aspects of the System Specification, System Requirements Review, System Design Review, Software Requirements Specification and Related Documents, Software Specification Review, Correction of Defects, Configuration Management, Software Project Management, Software Support, etc.
- Drafting Portions of the SQE Plan

August 27

Preliminary Design Phase

- Performing SQE Related to Software Top Level Design Document, Correction of Defects, Test Documents, Preliminary Design Review, Configuration Management, Software Project Management, Software Support, etc.
- Drafting Portions of the SQE Plan

August 28

Detailed Design Phase

- Performing SQE Related to Software Detailed Design Document, Data Base Design Document, Correction of Defects, Critical Design Review, Test Documents, Configuration Management, Software Project Management, Software Support, etc.
- Drafting Portions of the SQE Plan

Coding and Unit Testing Phase

- Performing SQE Related to Coding, Compiling, Unit Testing/ Retesting, Correction of Defects, Configuration Management, Software Project Management, Software Support, etc.
- Drafting Portions of the SQE Plan

August 29

Computer Software Component (CSC) Integration and Testing Phase

- Performing SQE Related to Integration, CSC Testing/Retesting, Correction of Defects, Configuration Management, Test Readiness Review, Software Project Management, Software Support, etc.
- Drafting Portions of the SQE Plan

Computer Software Configuration Item (CSCI) Testing Phase

- Performing SQE Related to CSCI Testing/Retesting, Correction of Defects, Configuration Management, Software Project Management, Software Support, Configuration Audits and Acceptance
- Drafting Portions of the SQE Plan

Faculty

Dennis L. Wood, President, Software Enterprises Corporation, Westlake Village, California, is an internationally recognized authority on software life cycle management. He has written winning software management proposals for bidders, covering software project management, configuration management, quality assurance, reliability, and testing.

He has developed projects for Government; originated software specs; and evaluated software support standards for the U.S. and Canadian governments. Mr. Wood developed the Army's first Computer Resources Life Cycle Management Plan for the Pershing Weapon System.

He performs research, consulting, and training in the technical and management aspects of software acquisition, development, maintenance and support, and their associated speciality areas. Mr. Wood has developed and conducted numerous software management courses for Army, Navy, Air Force, Marine Corps, U.S. industry, and Canadian governmental organizations. He has taught at UCLA, the Naval Postgraduate School and Royal Military College (Canada), and the Department of National Defence.

Mr. Wood is the author of numerous articles on software management, and participated in the development of the IEEE Standard for Software Quality Assurance Plans. He is a recipient of the Notable Americans Award and is listed in The International Who's Who of Intellectuals; Who's Who in the West; and Who's Who in Finance and Industry. He is also a member of various professional organizations, including the American Society for Quality Control.

General Information

Fee

The fee for each course is $995, and includes all instruction and materials.

Registration

Return the attached registration form with a check, purchase order, or company authorization to bill. A tentative telephone reservation may be made by calling (301) 985-7157, or toll-free within Maryland (800) 638-3902; however, your reservation will not be confirmed until payment or purchase order is received. Early registration is encouraged as registrations are accepted on a first-come, first-served basis.

Team Registrations

If three or more people from the same organization and location attend the same course, they will receive a 10% discount.

Confirmation

Registration will be confirmed promptly by mail. Call (301) 985-7157 if you have not received your confirmation within two weeks of sending in your registration form.

Cancellation and Refunds

All notices of cancellation and refunds must be sent to the Registration Clerk, Conferences and Institutes Program, The University of Maryland University College, College Park, MD 20742. Refund of the registration fee, less a cancellation fee of $50, will be made if written notice is received five working days before the course begins. No refund, (full or partial) will be made after this time.

Location and Lodging

The courses will be held at the Gaithersburg Marriott, 620 Lake Forest Boulevard, Gaithersburg, MD 20877. Please call (301) 977-8900 to make your lodging reservation.

Tax Deduction

Treasury Regulation Section 1.162-5(a) permits an income tax deduction for educational expenses. Check current IRS regulations.

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The CEU is a nationally recognized method for recording participation in a continuing education program that does not carry credit toward a degree, but does meet established standards for increasing knowledge and competencies. One CEU is awarded for each 10 contact hours of participation in an organized non-credit continuing education program. You will receive 3.5 CEUs upon completion of either course.

Social Security Number

Your Social Security Number is used only as a record identification number and will not be disclosed to any third party except on records sent at your request or otherwise pursuant to the Family Education Rights and Privacy Act of 1974.

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Department/Administrative Unit _____
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City _____ State _____ Zip Code _____
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☐ Please bill my: ☐ CHOICE ☐ VISA ☐ MasterCard
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Make checks payable to THE UNIVERSITY OF MARYLAND. Registration will not be considered complete unless payment or billing authorization accompanies this registration form.

I understand the cancellation and refund policies as stated in this brochure.

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Attachment M

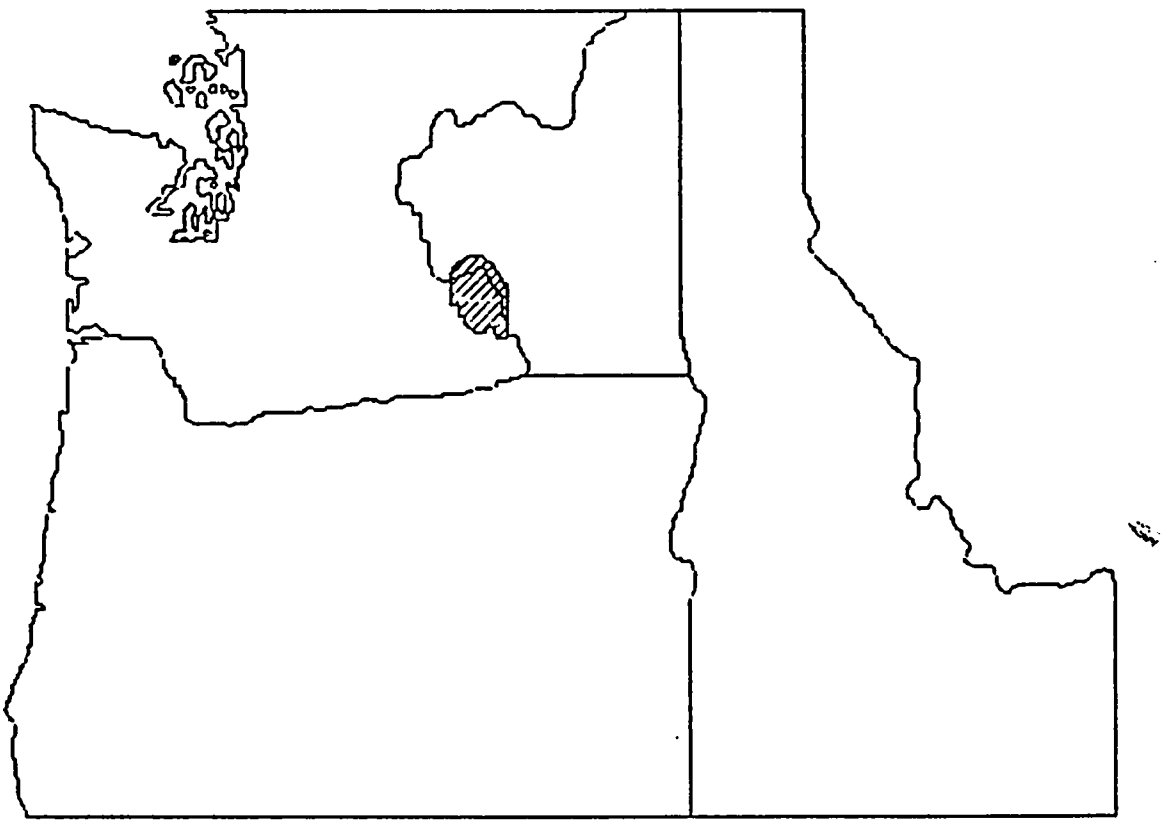
M

Hanford Health Effects Panel

Richland, Washington

September 26, 1986

PRELIMINARY RECOMMENDATIONS



Sponsored By:

The State of Washington,
The State of Oregon,
The Yakima Indian Nation,
The Confederated Tribes of the
Umatilla Indian Reservation,
The Nez Perce Tribe,
The Indian Health Service

Coordinated by the Washington Department of Social and Health Services,
Office of Radiation Protection

Preliminary Recommendation

Community Epidemiology

The Hanford Health Effects Panel (HHEP) recommends that additional studies of the possible effects of all past radiological exposures be considered. We recognize that uncertainty exists in the precise radiation dose, populations exposed, and whether or not adverse health effects have occurred as a result of releases from the Hanford facility.

The HHEP further recommends that as the highest priority a system be developed to determine morbidity of thyroid conditions known or suspected to be associated with radiation exposure. We recommend this because of releases reported in the historical documents, the high degree of concern about illnesses suspected to have resulted from these releases, and the potential to gain new scientific knowledge. Then, an appropriate analytic study should be conducted to determine whether or not these conditions are associated with the reported releases.

The involved regional organizations (States and Tribes) should cooperatively select an investigator to develop a study protocol and secure adequate funding.

The HHEP has identified as a high priority the establishment of an integrated prospective health surveillance system which would allow monitoring of health outcomes of concern. The states of Washington, Oregon, Idaho, and the Indian Tribes should first catalog and evaluate the feasibility of utilizing existing data systems such as hospital discharge, tumor registries, health insurance records, laboratory and pathology reports to establish a disease surveillance program before considering the establishment of a new and separate data collection system.

Registries of reproductive outcomes in all three states to include all Native American Tribes would be beneficial for future surveillance but not useful to assess past exposures.

Studies of other diseases/conditions or registry development should be considered as more exposure and health information become available. Some illnesses of concern reported by the public may not be radiation associated but may need to be followed up for other reasons. The HHEP recognizes that other reviews and studies will be proposed and urge that each proposal be required to carefully delineate in a peer/public reviewed protocol the purpose, methods, exposure concerns and statistical power before implementation.

Preliminary Recommendation

Hanford Workforce Epidemiologic Studies

1. The current epidemiologic studies of Hanford workers should be expanded to include morbidity and adverse reproductive outcome among workers and their spouses.

2. Initially a mortality study should be undertaken on other personnel who have worked at Hanford, including:

   a. military personnel assigned to the Hanford Reservation (for example, the personnel exposed to ruthenium in early years),

   b. construction workers,

   c. other subcontractor workers if enough of their group can be identified.

3. External radiation doses should be determined as accurately as possible, for all groups studied and an attempt should be made to expand the assessment of internal doses from radionuclides.

4. Hazardous chemical exposures should be determined for each job or department. This should be included in the data base, both retrospectively and prospectively, for epidemiologic studies of possible health effects associated with these exposures.

5. A system should be developed to enter routinely all diagnoses from health insurance claims in the data base so that epidemiologic investigations can be initiated quickly if new health concerns develop within the workforce.

6. Protocols for new studies should include statistical power calculations so that a statement can be made regarding the probability of detecting a true association. For completed studies, confidence intervals should be calculated for risk estimates.

7. The issue of possible statistical control or adjustment for the "healthy worker effect" should be fully investigated.

8. A mechanism should be developed, at least prospectively, to track workers after they leave Hanford so that the occurrence of illnesses of interest can be monitored.

9. The Committee recommends that state health officials and Indian Tribes continue to be kept informed about any DOE health studies that involve their citizens.

We understand that some of these recommendations are already being pursued by the researchers at Hanford. The comments presented above are intended to support these efforts and to encourage an expansion of the existing data base to make possible additional types of studies, especially those involving morbidity, adverse reproductive outcome, and adverse health effects of hazardous chemical exposures.

Preliminary Recommendation

Environmental Monitoring

1. The Panel has identified some differences among reports relating to the release of radioactive materials. Other inconsistencies probably also exist. There are also "gaps" in the data. These inconsistencies exist in the data from 1944 to 1956 and require further investigation and clarification.

2. The Panel recommends specifically that for assessment purposes, DOE, in collaboration with the states of Idaho, Washington, Oregon and the Indian Tribes, establish a publicly accessible, historical and ongoing data bank of all available data including those for unusual occurrences, planned and unplanned releases, which may have resulted in environmental contamination and exposure to persons.

3. State and local agencies do not participate in some radiological emergency drills. The Panel recommends that funds be found to permit regional agencies to participate in these drills.

4. The Panel is of the opinion that some areas of Hanford are nuclear and hazardous waste sites. We therefore urge a concerted remedial investigation and feasibility study of the sites together with appropriate federal, state, and local agencies and the Indian Tribes. The Panel recognizes and supports that the DOE/Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response Compensation and Liability Act (CERCLA) process is ongoing.

5. At the present time, the states of Oregon and Washington are conducting off-site radiological environmental surveillance programs in their respective states. (The state of Washington is additionally performing radiological monitoring at selected locations on the Hanford site. It is also in the early stages of implementing a monitoring and enforcement program for radiological effluents to the air). The state of Idaho and the affected Indian Tribes are not presently conducting environmental radiological surveillance programs although such programs are proposed by the Indian Tribes for the near future.

   The Panel understands that Oregon and Washington and the three Tribes are planning to coordinate their radiological monitoring programs on a regional basis. The Panel endorses these coordination efforts as a way to provide an independent assessment of the radiological impact of Hanford operations on the off-site environment.

6. Although no data on the subject were presented to the Panel, the Panel understands that some limited soil sampling to an appropriate depth (profile sampling) has been performed on the Hanford site. The Panel would encourage the expansion of this program as a method of obtaining a measurement of the amount of radionuclides deposited on the Hanford site since the beginning of operations. A sufficient number of samples should be collected to obtain statistically valid data. Radionuclides to be evaluated should include (but not be limited to) isotopes of plutonium,

americium, iodine, strontium, and cesium. An adequate number of additional samples should also be collected in the off-site areas at appropriate locations for use as controls and for determination of levels of radionuclide deposition.

These data should be useful in evaluating the amounts of those long-lived radionuclides released during past operations.

The Panel suggests that this sampling and evaluation be performed in coordination with the state of Washington.

7. The Panel is concerned about the advisability of continued soil disposal of chemical and nuclear waste on the Hanford site. Insufficient information was available to allow the Panel to assess the environmental impact of continuation of such disposal practices. Such an assessment should be a priority.

8. Complete individual environmental sample results should be made readily available following publication of the annual report.

9. Independent assessment of the radiological monitoring programs of Washington and Oregon should be implemented to assure their quality, efficiency, and utility in facilitating a coordinated program.

   Each existing environmental monitoring program conducted by the states, Indian Tribes, or DOE should have a clear statement of its purpose, goals and objectives so that their effectiveness can be adequately assessed and gaps identified in the integrated monitoring programs.

Preliminary Recommendation

Dose Reconstruction

In February 1986, the USDOE released for public inspection 19,000 pages of historical documents describing environmental monitoring results and programs at the Hanford site. Although these documents were available to the Panel during its deliberations, time available to the Panel during its deliberations, time available to the Panel did not permit a sufficiently detailed examination to permit dose assessment of reported releases. Such a detailed dose reconstruction and assessment must, of necessity, require a major effort requiring perhaps a number of person-years and is being separately evaluated by the Historical Documents Review Committee. Recognizing this problem, the state of Washington DSHS staff prepared for presentation to the Panel an overview of the data in the historical documents together with a limited preliminary dose assessment. The Panel, after review of this information, concluded that substantial quantities of radionuclides, particularly Iodine-131, had been released in the time period prior to 1956 and that off-site radiation exposures, particularly to the thyroid were probably high enough to warrant further dose assessment and study of health effects.

1. The Panel recommends that dose estimates be developed for community population groups possibly affected by past releases from the Hanford site. These estimates will be useful in feasibility and epidemiologic studies.

2. The Panel recognizes that important factors affecting doses include geographic area (defined by distance, meteorology, hydrology and food source), age, sex, radionuclides calendar time and exposure pathway (inhalation, diet, drinking water, skin absorption, etc.) The combination of these factors represents a very large number of categories. Therefore, the Panel recommends that doses be calculated first for categories which represent possible higher risks such as children living close to Hanford and exposed to I-131 through consumption of milk.

3. The dose reconstruction will require a thorough catalog of releases, including: isotopes involved, quantity, date, location and medium onto which released (soil, air, river). If possible, prevailing meteorologic conditions during the release should also be noted. The Panel recommends that this catalog be developed.

4. The Panel recognizes that both monitoring results and mathematical modeling may be useful in estimating dose. The Panel recommends that a range of possible exposures be calculated based on alternative assumptions.

5. The Panel recommends that the dose be expressed in standard units which will allow comparison of doses from various radionuclides.

Preliminary Recommendation

Policy on Release of DOE Research and Data*

We recommend that DOE continue to pursue their policy development on the release of DOE sponsored research data. Our suggestions are:

1. The source data should be available no later than three years following the lastest report published in the scientific literature of findings by DOE researchers so that the rights of the principal investigator are protected.

2. In the case of studies involving on-going follow-up of cohorts, source data up to the era of follow-up reflected in the report or the publication, should be made available.

3. The data released should have sufficient detail to allow replications of the published analyses.

4. Access to raw data to verify accuracy, consistency and completeness will be made within the limits of the restrictions imposed on DOE by data providers.

*(Dr. Smith, NIOSH abstaining because of conflict of interest)

Preliminary Recommendation

Response to Public Testimony
by the Hanford Health Effects Panel

The Panel recommends, having heard the public testimony, that a response from the State Health Department and Indian Health Service be developed that would provide information and services to the public. Information on disease causation, degree of medical certainty, and availability of medical services should be available on request to individuals and representative organizations including the Indian Tribes. In addition, the health departments should maintain a continuing accurate record of inquiries in order to ensure adequate recognition of concerned citizens and to provide some input to surveillance and epidemiology efforts.

The letter from the Department's of Health to the citizens who testified should include the above excerpt or all of the Panel Report. In addition, the name, address, and telephone number of an individual with the State Health Departments should be included as a point of entry for inquiries by the public. Thanks should be expressed for their written comments or appearance before the panel, and a copy of letters should be sent to the Tribes and community organizations.

Attachment N

N

August 18, 1986

Notes for D. Fehringer (consistent with those made to Comm. Sec. with the exception of comment 6)

The following are comments on recent proposed changes to 10 CFR 60 concerning DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTES IN GEOLOGIC REPOSITORIES; CONFORMING AMENDMENTS--FR 22288 of June 16, 1986.

1. In connection with the proposal to invoke the "individual protection" requirements of 40 CFR 191.15 and the "ground water protection" requirements of 40 CFR 191.16 the proposed rule does not accurately convey the intent of the EPA standard regarding application of the EPA term "undisturbed performance." In addition the EPA intent (considering the background information provided with the standard) in their use of the phrase "significant processes and events" in 191.13(a) is is not conveyed by the proposed rule.

Specifically, the respective changes to part 60 make use of the terms "anticipated processes and events" and "unanticipated processes and events" to specify the range of processes and events meant by EPA. Since these two terms as defined by Part 60 do not include expected human induced events which are not considered "human intrusion", for example expected irrigation in the accessible environment which affects hydrologic gradients from the repository to the assessable environment, the proposed rule change omits the requirement to consider this class of events.

I propose that the rule invoke the EPA standard verbatim and that the definitions of pertinent terms in the EPA standard be added to the list of seven terms already proposed for Part 60. For example the terms "aquifer", "undisturbed performance" and "performance assessment" should be added to the terms defined in Part 60 to accurately invoke the EPA standard.

2. The use of the term "containment" in the EPA standard is inconsistent with the definition of containment in Part 60. For example in the Part 60 term confinement within a designated boundary is the operable concept, whereas in the EPA standard context "containment" includes the idea of slow release to the accessible environment, more in keeping with the definition of "isolation" in Part 60. This difference should be recognized in the justification of Part 60 and EPA's "containment" equated to NRC's "isolation".

3. The term "aquifer" is an important term in the EPA standard and may not be consistent with the intent of the use of the term elsewhere in Part 60. For example, as used by EPA "aquifer"

includes a group of geologic formations capable of yielding a significant amount of water. This could include a number of water bearing zones deep into the earth any one of which by itself would not be considered an aquifer in the context of existing usage in Part 60.

I recommend that the definition, as suggested above, be incorporated into Part 60--it being necessary to invoke the EPA standard, and the rest of Part 60 be reviewed to assure the term as defined does not contradict the intent of other provisions of Part 60. If there is a contradiction, this should be identified and a resolution incorporated into the proposed changes.

4. The term "disposal system" as defined by the EPA standard is not consistent with the NRC term "geologic repository" in contrast to the claim in the proposed changes to the rule. For example, the EPA term, "disposal system", would include the waste packages and shaft and borehole seals, as well as, backfill materials. These items are not included in the current Part 60 definition of "geologic repository". This conflict should be resolved by including the definition of "disposal system" from the EPA standard in the change to Part 60. The term is operable in the "assurance requirements" of the EPA standard and should be used in the corresponding sections of Part 60 which are intended to invoke the 191.14.

5. It is recommended that the assurance provisions of 191.14 be included in Part 60 verbatim to assure they are observed by the applicant in full, consistent with the Commission's intent. Anything less implies the requirements will not be invoked by the Commission.

6. The EPA standard backup information indicates that the ALARA provision was not necessary because of the siting guidelines which promoted use of a good multiple barrier system, including a natural system with 100,000 year travel time for the groundwater from the edge of the disturbed zone to the accessible environment. If DOE's selection criteria for the natural portion of the system do not include normal cost and safety/environmental pro's and con's associated with evaluation of systems, in this case a "disposal system", then is is not apparent that the intent of the EPA's assurance requirement concerning multiple barriers, including a good natural barrier, will be met, much less demonstrable at the licensing hearing.

The discussion in the EPA background information indicates that an actual post emplacement travel time of 1000 years is expected to assure that individuals will be protected per the individual protection dose limits. I note that in connection with the irrigation possibilities for the BWIP site and potentially other sites the pre emplacement and post emplacement travel times may be different for this site and other sites by a factor of 50 to 100 or more because of changes in the hydraulic gradient induced by the irrigation.

I consider that the Staff should include a discussion of this issue in the rule and clarify the requirement for multiple barriers as to what is required in the way of their performance during post emplacement, particularly in the natural portion of the disposal system and relative to meeting the individual protection requirements in the EPA standard.

Attachment O

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TELEPHONE
575-1500
AREA CODE 509

August 22, 1986

Mr. Bob Cook
1955 Jadwin, Suite 310A
Richland, Washington 99352

Dear Bob:

Enclosed are some materials that address the United States' policy towards Indian nations. Specifically, the following materials deal with the issues of tribal self-government and of the Government's responsibilities:

1. Statement on Indian Policy, January 24, 1983, Administration of Ronald Reagan;

2. Excerpt from Cohen's Handbook of Federal Indian Law;

3. Indian Policy, U.S., E.P.A.; and,

4. Selected passages from the following cases:

   a. Seminole Nation v. United States, 316 U.S. 286, 296-97 (1941);

   b. Creek County v. Seber, 318 U.S. 705, 715-16 (1942);

   c. Morton v. Ruiz, 415 U.S. 199, 236 (1974); and,

   d. Navajo Tribe v. United States, 364 F.2d 320, 322 (Ct. Cl. 1966).

We hope that these materials are helpful to you. If you have any questions or if you need additional information, please let us know. It was nice to see you at the Quarterly Meeting. I trust all is going well with you.

Sincerely,

HOVIS, COCKRILL, WEAVER & BJUR

Nancy E. Hovis
NEH:ls
Enclosures

cal Affairs and staffed by the Special Assistant to the President for Private Sector Initiatives.

The President developed the internal advisory committee to show his continued support for the private sector initiatives program and to implement one of the final recommendations of the President's Task Force on Private Sector Initiatives.

Statement on Indian Policy
January 24, 1983

This administration believes that responsibilities and resources should be restored to the governments which are closest to the people served. This philosophy applies not only to State and local governments but also to federally recognized American Indian tribes.

When European colonial powers began to explore and colonize this land, they entered into treaties with sovereign Indian nations. Our new nation continued to make treaties and to deal with Indian tribes on a government-to-government basis. Throughout our history, despite periods of conflict and shifting national policies in Indian affairs, the government-to-government relationship between the United States and Indian tribes has endured. The Constitution, treaties, laws, and court decisions have consistently recognized a unique political relationship between Indian tribes and the United States which this administration pledges to uphold.

In 1970 President Nixon announced a national policy of self-determination for Indian tribes. At the heart of the new policy was a commitment by the Federal Government to foster and encourage tribal self-government. That commitment was signed into law in 1975 as the Indian Self-Determination and Education Assistance Act.

The principle of self-government set forth in this act was a good starting point. However, since 1975 there has been more rhetoric than action. Instead of fostering and encouraging self-government, Federal policies have by and large inhibited the political and economic development of the tribes. Excessive regulation and self-perpetuating bureaucracy have stifled local decisionmaking, thwarted Indian control of Indian resources, and promoted dependency rather than self-sufficiency.

This administration intends to reverse this trend by removing the obstacles to self-government and by creating a more favorable environment for the development of healthy reservation economies. Tribal governments, the Federal Government, and the private sector will all have a role. This administration will take a flexible approach which recognizes the diversity among tribes and the right of each tribe to set its own priorities and goals. Change will not happen overnight. Development will be charted by the tribes, not the Federal Government.

This administration honors the commitment this nation made in 1970 and 1975 to strengthen tribal governments and lessen Federal control over tribal governmental affairs. This administration is determined to turn these goals into reality. Our policy is to reaffirm dealing with Indian tribes on a government-to-government basis and to pursue the policy of self-government for Indian tribes without threatening termination.

In support of our policy, we shall continue to fulfill the Federal trust responsibility for the physical and financial resources we hold in trust for the tribes and their members. The fulfillment of this unique responsibility will be accomplished in accordance with the highest standards.

Tribal Self-Government

Tribal governments, like State and local governments, are more aware of the needs and desires of their citizens than is the Federal Government and should, therefore, have the primary responsibility for meeting those needs. The only effective way for

Indian reservations to develop is through tribal governments which are responsive and accountable to their members.

Early in this nation's dealings with Indian tribes, Federal employees began to perform Indian tribal government functions. Despite the Indian Self-Determination Act, major tribal government functions—enforcing tribal laws, developing and managing tribal resources, providing health and social services, educating children—are frequently still carried on by Federal employees. The Federal Government must move away from this surrogate role which undermines the concept of self-government.

It is important to the concept of self-government that tribes reduce their dependence on Federal funds by providing a greater percentage of the cost of their self-government. Some tribes are already moving in this direction. This administration pledges to assist tribes in strengthening their governments by removing the Federal impediments to tribal self-government and tribal resource development. Necessary Federal funds will continue to be available. This administration affirms the right of tribes to determine the best way to meet the needs of their members and to establish and run programs which best meet those needs.

For those small tribes which have the greatest need to develop core governmental capacities, this administration has developed, through the Assistant Secretary of the Interior for Indian Affairs, the Small Tribes Initiative. This program will provide financial support necessary to allow these tribes to develop basic tribal administrative and management capabilities.

In keeping with the government-to-government relationship, Indian tribes are defined by law as eligible entities and receive direct funding, if they wish, in five block grant programs administered by the Department of Health and Human Services. These and other blocks to the States consolidated dozens of categorical Federal domestic assistance programs to reduce fragmentation and overlap, eliminate excessive Federal regulation, and provide for more local control. This administration now proposes that Indian tribes be eligible for direct funding in the Title XX social services block, the block with the largest appropriation and the greatest flexibility in service delivery.

In addition, we are moving the White House liaison for federally recognized tribes from the Office of Public Liaison to the Office of Intergovernmental Affairs, which maintains liaison with State and local governments. In the past several administrations, tribes have been placed along with vital interest groups, such as veterans, businessmen, and religious leaders. In moving the tribal government contact within the White House Intergovernmental Affairs staff, this administration is underscoring its commitment to recognizing tribal governments on a government-to-government basis.

Further, we are recommending that the Congress expand the authorized membership of the Advisory Commission on Intergovernmental Relations (42 U.S.C. 4273) to include a representative of Indian tribal governments. In the interim, before congressional action, we are requesting that the Assistant Secretary for Indian Affairs join the Commission as an observer. We also supported and signed into law the Indian Tribal Governmental Tax Status Act which provides tribal governments with essentially the same treatment under Federal tax laws as applies to other governments with regard to revenue raising and saving mechanisms.

In addition, this administration calls upon Congress to replace House Concurrent Resolution 108 of the 83d Congress, the resolution which established the now discredited policy of terminating the Federal-tribal relationship. Congress has implicitly rejected the termination policy by enacting the Indian Self-Determination and Education Assistance Act of 1975. However, because the termination policy declared in H. Con. Res. 108 has not been expressly and formally repudiated by a concurrent resolution of Congress, it continues to create among the Indian people an apprehension that the United States may not in the future honor the unique relationship between the Indian people and the Federal Government. A lingering threat of termination has no place in this administration's policy of self-government for Indian tribes, and I ask Congress to again express its support of self-govern-

ment.

These actions are but the first steps in restoring control to tribal governments. Much more needs to be done. Without sound reservation economies, the concept of self-government has little meaning. In the past, despite good intentions, the Federal Government has been one of the major obstacles to economic progress. This administration intends to remove the impediments to economic development and to encourage cooperative efforts among the tribes, the Federal Government, and the private sector in developing reservation economies.

Development of Reservation Economies

The economies of American Indian reservations are extremely depressed, with unemployment rates among the highest in the country. Indian leaders have told this administration that the development of reservation economies is their number one priority. Growing economies provide jobs, promote self-sufficiency, and provide revenue for essential services. Past attempts to stimulate growth have been fragmented and largely ineffective. As a result, involvement of private industry has been limited, with only infrequent success. Developing reservation economies offers a special challenge: devising investment procedures consistent with the trust status, removing legal barriers which restrict the type of contracts tribes can enter into, and reducing the numerous and complex regulations which hinder economic growth.

Tribes have had limited opportunities to invest in their own economies, because often there has been no established resource base for community investment and development. Many reservations lack a developed physical infrastructure, including utilities, transportation, and other public services. They also often lack the regulatory, adjudicatory, and enforcement mechanisms necessary to interact with the private sector for reservation economic development. Development on the reservation offers potential for tribes and individual entrepreneurs in manufacturing, agribusiness, and modern technology, as well as fishing, livestock, arts and crafts, and other traditional livelihoods.

Natural resources such as timber, fishing, and energy provide an avenue of development for many tribes. Tribal governments have the responsibility to determine the extent and the methods of developing the tribe's natural resources. The Federal Government's responsibility should not be used to hinder tribes from taking advantage of economic development opportunities.

With regard to energy resources, both the Indian tribes and the Nation stand to gain from the prudent development and management of the vast coal, oil, gas, uranium, and other resources found on Indian lands. As already demonstrated by a number of tribes, these resources can become the foundation for economic development on many reservations, while lessening our nation's dependence on imported oil. The Federal role is to encourage the production of energy resources in ways consistent with Indian values and priorities. To that end, we have strongly supported the use of creative agreements such as joint ventures and other nonlease agreements for the development of Indian mineral resources.

It is the free market which will supply the bulk of the capital investments required to develop tribal energy and other resources. A fundamental prerequisite to economic development is capital formation. The establishment of a financial structure that is a part of the Indian reservation community is essential to the development of Indian capital formation.

Federal support will be made available to tribes to assist them in developing the necessary management capability and in attracting private capital. As a first step in that direction, we provided funds in the FY 1983 budget to provide seed money to tribes to attract private funding for economic development ventures on reservations. As more tribes develop their capital resource base and increase their managerial expertise, they will have an opportunity to realize the maximum return on their investments and will be able to share an increasing portion of the business risk.

It is the policy of this administration to encourage private involvement, both Indian and non-Indian, in tribal economic development. In some cases, tribes and the private

sector have already taken innovative approaches which have overcome the legislative and regulatory impediments to economic progress.

Since tribal governments have the primary responsibility for meeting the basic needs of Indian communities, they must be allowed the chance to succeed. This administration, therefore, is establishing a Presidential Advisory Commission on Indian Reservation Economies. The Commission, composed of tribal and private sector leaders, is to identify obstacles to economic growth in the public and private sector at all levels; examine and recommend changes in Federal law, regulations, and procedures to remove such obstacles; identify actions State, local, and tribal governments could take to rectify identified problems; and recommend ways for the private sector, both Indian and non-Indian, to participate in the development and growth of reservation economies. It is also to be charged with the responsibility for advising the President on recommended actions required to create a positive environment for the development and growth of reservation economies.

Numerous Federal agencies can offer specialized assistance and expertise to the tribes not only in economic development, but also in housing, health, education, job training, and other areas which are an integral part of reservation economies. It is to the advantage of the tribes, and in the interest of the taxpayers, that the Federal role be fully reviewed and coordinated. Therefore, this administration directs the Cabinet Council on Human Resources to act as a mechanism to ensure that Federal activities are nonduplicative, cost-effective, and consistent with the goal of encouraging self-government with a minimum of Federal interference.

Summary

This administration intends to restore tribal governments to their rightful place among the governments of this nation and to enable tribal governments, along with State and local governments, to resume control over their own affairs.

This administration has sought suggestions from Indian leaders in forming the policies which we have announced. We intend to continue this dialog with the tribes as these policies are implemented.

The governmental and economic reforms proposed for the benefit of Indian tribes and their members cannot be achieved in a vacuum.

This nation's economic health—and that of the tribes—depends on adopting this administration's full economic recovery program. This program calls for eliminating excessive Federal spending and taxes, removing burdensome regulations, and establishing a sound monetary policy. A full economic recovery will unleash the potential strength of the private sector and ensure a vigorous economic climate for development which will benefit not only Indian people but all other Americans as well.

REAGAN ADMINISTRATION INDIAN POLICY INITIATIVES

—Request that Congress repudiate House Concurrent Resolution 108 of the 83d Congress which called for termination of the Federal-tribal relationship. The administration wants this lingering threat of termination replaced by a resolution expressing its support of a government-to-government relationship.

—Ask Congress to expand the authorized membership of the Advisory Commission on Intergovernmental Relations to include a representative of Indian tribal governments. In the interim, request that the Assistant Secretary of the Interior for Indian Affairs join the ACIR as an observer.

—Move the White House liaison for federally recognized tribes from the Office of Public Liaison to the Office of Intergovernmental Affairs.

—Establish a Presidential Advisory Commission on Indian Reservation Economies to identify obstacles to economic growth and recommend changes at all levels, recommend ways to encourage private sector involvement, and advise the President what actions are needed to create a positive environment for the development and growth of reservation economies.

—Support direct funding to Indian tribes under the Title XX social services block grant to States.

—Sought and obtained funds for FY 1983

to implement the Small Tribes Initiative to provide financial support needed to allow small tribes to develop basic tribal administrative and management capabilities.

—Sought and obtained funds for FY 1983 to provide seed money for tribes for economic development ventures on reservations.

—Supported and signed into law the Tribal Governmental Tax Status Act which will provide tribal governments with the same revenue raising and saving mechanisms available to other governments.

—Support the use of creative agreements such as joint ventures and other non-lease agreements for the development of Indian mineral resources.

—Direct the Cabinet Council on Human Resources to act as a review and coordination mechanism to ensure that Federal activities are non-duplicative, cost-effective, and consistent with the goal of encouraging tribal self-government with a minimum of Federal interference.

Appointment of Jean J. Smoot as a Member of the Board of Foreign Scholarships

January 25, 1983

The President today announced his intention to appoint Jean J. Smoot to be a member of the Board of Foreign Scholarships for a term expiring September 22, 1985. She would succeed Samuel B. Spencer, Jr.

Since 1974 she has been associate professor of English at North Carolina State University in Raleigh, N.C. She was an assistant professor of English at North Carolina State in 1968–1974.

She graduated from Eckerd College (B.A., 1964) and the University of North Carolina at Chapel Hill (Ph. D., 1968). She is married, has four children, and resides in Wake Forest, N.C. She was born June 10, 1943.

Question-and-Answer Session With Network Anchors on the State of the Union Address'

January 25, 1983

The President. I'm supposed to get out of here in like 2½ minutes and not interrupt any of the other briefings that you've had. I really came in to tell all of you that everything you've heard is off the record. [*Laughter*]

I'll sit for just a second since you pulled a chair out. But I know that you've been getting a quite capable briefing from all those who are on hand as to generally where our minds are going in here. And—just wanted to prove I was still alive and on duty. [*Laughter*]

Q. Do you see this speech as crucial to you in a political way tonight, Mr. President?

The President. Well, since it's a national institution and an annual institution, I don't believe any administrations in the past have risen or fallen on the State of the Union address. I welcome it as an opportunity to maybe make some things clear and explain some things, what we're trying to do. I must say this, that after all the years in the other industry, I've been surprised that I could still get puckered up going in to appear before an audience that—there's something about that particular institution over there that you do feel a little uptight when you face them.

Q. Mr. President, if you had to appear on television tonight in another role and you

Cohen's Handbook

but generally they provide for a broad construction when the issue is whether Indian rights are reserved or established, and for a narrow construction when Indian rights are to be abrogated or limited. These canons play an essential role in implementing the trust relationship between the United States and Indian tribes and are involved in most of the subject matter of Indian law.

c. The Trust Responsibility as a Limitation on Federal Administrative Power

In general, the ordinary principles and procedures of federal administrative law apply to dealings of federal executive agencies with Indians. In Indian matters, as in others, federal executive officials are limited to the authority conferred on them by statute.[71] The "presumption of reviewability" also applies to federal actions affecting Indians.[72] The lawfulness of executive officials' actions may be reviewed in suits either for money damages [73] or for equitable or other relief.[74] The Administrative Procedure Act [75] applies to acts of federal officials affecting Indians.[76]

In addition, the federal trust responsibility imposes strict fiduciary standards on the conduct of executive agencies — unless, of course, Congress has expressly authorized a deviation from these standards in exercise of its "plenary" power. Since the trust obligations are binding on the United States, these standards of conduct would seem to govern all executive departments that may deal with Indians, not just those such as the Bureau of Indian Affairs which have special statutory responsibilities for Indian affairs.[77] Moreover, in some contexts the fiduciary obligations of the United States mandate that special regard be given to the procedural rights of Indians by federal administrative agencies.[78]

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[71] *See generally* Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402 (1971); 5 U.S.C. § 706(2)(C); 4 K. DAVIS, ADMINISTRATIVE LAW TREATISE §§ 30.09-.10 (St. Paul: West Publishing Co., 1958). *See also* Organized Village of Kake v. Egan, 369 U.S. 60, 63 (1962).

[72] *See* Tooahnippah v. Hickel, 397 U.S. 598 (1970). *See generally* Abbott Laboratories v. Gardner, 387 U.S. 136 (1967).

[73] The Court of Claims has jurisdiction over certain claims against the United States for money damages. 28 U.S.C. §§ 1491, 1505. *See* Ch. 9, Sec. E *infra*. The Indian Claims Commission Act provided a forum in which tribes, bands, or identifiable groups of Indians could seek compensation for wrongs done by the United States before 1946. 25 U.S.C. §§ 70-70v-3. *See Ch. 9, Sec. E infra.*

[74] The sovereign immunity of the United States has been waived for suits seeking declaratory and equitable relief. 5 U.S.C. §§ 702, 703. *See* Ch. 6, Sec. A4a(1) *infra*. Sovereign immunity had been a significant bar to some actions by Indians. *See* Morrison v. Work, 266 U.S. 481 (1925); Scholder v. United States, 428 F.2d 1123 (9th Cir.), *cert. denied*, 400 U.S. 942 (1970). However, it has been established that Indian tribes can sue federal officers for acts outside their statutory authority. *See* Lane v. Pueblo of Santa Rosa, 249 U.S. 110 (1919). Tribes, however, remain immune from suit. Puyallup Tribe, Inc. v. Department of Game, 433 U.S. 165 (1977); United States v. U.S. Fidelity & Guart. Co., 309 U.S. 506 (1940). *See* Ch. 6, Sec. A4c *infra*.

[75] 5 U.S.C. §§ 551-559, 701-706, 1305, 3105, 3344, 5372, 7521.

[76] *See* Morton v. Ruiz, 415 U.S. 199 (1974); Tooahnippah v. Hickel, 397 U.S. 598 (1970).

[77] *E.g.*, Navajo Tribe v. United States, 364 F.2d 320 (Ct. Cl. 1966); Pyramid Lake Paiute Tribe v. Morton, 354 F. Supp. 252 (D.D.C. 1973). *See generally* United States v. Winnebago Tribe, 542 F.2d 1002 (8th Cir. 1976).

[78] *See* Morton v. Ruiz, 415 U.S. 199, 236 (1974). A leading authority on federal administrative law has suggested that *Ruiz* imposes more extensive procedural requirements on the Bureau of Indian Affairs than are customary for other federal agencies. Davis, *Administrative Law Surprises in the Ruiz Case*, 75 COLUM. L. REV. 823 (1975).

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
EXTERNAL AFFAIRS

INDIAN POLICY
U.S. ENVIRONMENTAL PROTECTION AGENCY

Attached are two documents which were adopted by the Environmental Protection Agency (EPA) on November 8, 1984, relating to Indian Tribes and Federal programs for protection of reservation environments:

1) EPA Policy for the Administration of Environmental Programs on Indian Reservations.

2) Indian Policy Implementation Guidance.

These documents lay the groundwork for EPA management of the Agency's regulatory programs on reservation lands. The cornerstones of the Policy and Guidance are the principles of Indian "self-government" and "government-to-government" relations between the Federal Government and Tribal Governments. Through implementation of the Policy, the Agency hopes to realize the long-range objective of including Tribal Governments as partners in decision-making and program management on reservation lands, much as we do with State Governments off-reservation.

In the beginning, implementation of the Policy will be slowly paced, as the Agency will need to seek legislative authority in many areas and go through a lengthy budget process before we can carry out the principles of the Policy and directives of the Guidance in a comprehensive manner. In the first year, however, we will begin to seek statutory changes, modify regulations, and work on selected pilot programs. These pilot programs will investigate problems associated with Tribal regulation of water and air quality and the handling and disposal of hazardous materials on reservation lands. The experience will help both EPA and the Tribes develop models for dealing with these problems in the special legal and political context of Indian reservations.

Environmental programming that will involve Tribal Governments in the Federal regulatory process on a significant scale is a new endeavor for EPA and Tribes alike. To be successful, we will need cooperation and assistance from all sectors and would welcome your on-going support.

If you have questions or need further information, please contact Leigh Price, National EPA Indian Coordinator, at (202) 382-5051.

Attachment

11/8/84

EPA POLICY FOR THE ADMINISTRATION OF ENVIRONMENTAL PROGRAMS ON INDIAN RESERVATIONS

INTRODUCTION

The President published a Federal Indian Policy on January 24, 1983, supporting the primary role of Tribal Governments in matters affecting American Indian reservations. That policy stressed two related themes: (1) that the Federal Government will pursue the principle of Indian "self-government" and (2) that it will work directly with Tribal Governments on a "government-to-government" basis.

The Environmental Protection Agency (EPA) has previously issued general statements of policy which recognize the importance of Tribal Governments in regulatory activities that impact reservation environments. It is the purpose of this statement to consolidate and expand on existing EPA Indian Policy statements in a manner consistent with the overall Federal position in support of Tribal "self-government" and "government-to-government" relations between Federal and Tribal Governments. This statement sets forth the principles that will guide the Agency in dealing with Tribal Governments and in responding to the problems of environmental management on American Indian reservations in order to protect human health and the environment. The Policy is intended to provide guidance for EPA program managers in the conduct of the Agency's congressionally mandated responsibilities. As such, it applies to EPA only and does not articulate policy for other Agencies in the conduct of their respective responsibilities.

It is important to emphasize that the implementation of regulatory programs which will realize these principles on Indian Reservations cannot be accomplished immediately. Effective implementation will take careful and conscientious work by EPA, the Tribes and many others. In many cases, it will require changes in applicable statutory authorities and regulations. It will be necessary to proceed in a carefully phased way, to learn from successes and failures, and to gain experience. Nonetheless, by beginning work on the priority problems that exist now and continuing in the direction established under these principles, over time we can significantly enhance environmental quality on reservation lands.

POLICY

In carrying out our responsibilities on Indian reservations, the fundamental objective of the Environmental Protection Agency is to protect human health and the environment. The keynote of this effort will be to give special consideration to Tribal interests in making Agency policy, and to insure the close involvement of Tribal Governments in making decisions and managing environmental programs affecting reservation lands. To meet this objective, the Agency will pursue the following principles:

1. THE AGENCY STANDS READY TO WORK DIRECTLY WITH INDIAN TRIBAL GOVERNMENTS ON A ONE-TO-ONE BASIS (THE "GOVERNMENT-TO-GOVERNMENT" RELATIONSHIP), RATHER THAN AS SUBDIVISIONS OF OTHER GOVERNMENTS.

EPA recognizes Tribal Governments as sovereign entities with primary authority and responsibility for the reservation populace. Accordingly, EPA will work directly with Tribal Governments as the independent authority for reservation affairs, and not as political subdivisions of States or other governmental units.

2. THE AGENCY WILL RECOGNIZE TRIBAL GOVERNMENTS AS THE PRIMARY PARTIES FOR SETTING STANDARDS, MAKING ENVIRONMENTAL POLICY DECISIONS AND MANAGING PROGRAMS FOR RESERVATIONS, CONSISTENT WITH AGENCY STANDARDS AND REGULATIONS.

In keeping with the principle of Indian self-government, the Agency will view Tribal Governments as the appropriate non-Federal parties for making decisions and carrying out program responsibilities affecting Indian reservations, their environments, and the health and welfare of the reservation populace. Just as EPA's deliberations and activities have traditionally involved the interests and/or participation of State Governments, EPA will look directly to Tribal Governments to play this lead role for matters affecting reservation environments.

3. THE AGENCY WILL TAKE AFFIRMATIVE STEPS TO ENCOURAGE AND ASSIST TRIBES IN ASSUMING REGULATORY AND PROGRAM MANAGEMENT RESPONSIBILITIES FOR RESERVATION LANDS.

The Agency will assist interested Tribal Governments in developing programs and in preparing to assume regulatory and program management responsibilities for reservation lands. Within the constraints of EPA's authority and resources, this aid will include providing grants and other assistance to Tribes similar to that we provide State Governments. The Agency will encourage Tribes to assume delegable responsibilities, (i.e. responsibilities which the Agency has traditionally delegated to State Governments for non-reservation lands) under terms similar to those governing delegations to States.

Until Tribal Governments are willing and able to assume full responsibility for delegable programs, the Agency will retain responsibility for managing programs for reservations (unless the State has an express grant of jurisdiction from Congress sufficient to support delegation to the State Government). Where EPA retains such responsibility, the Agency will encourage the Tribe to participate in policy-making and to assume appropriate lesser or partial roles in the management of reservation programs.

4. THE AGENCY WILL TAKE APPROPRIATE STEPS TO REMOVE EXISTING LEGAL AND PROCEDURAL IMPEDIMENTS TO WORKING DIRECTLY AND EFFECTIVELY WITH TRIBAL GOVERNMENTS ON RESERVATION PROGRAMS.

A number of serious constraints and uncertainties in the language of our statutes and regulations have limited our ability to work directly and effectively with Tribal Governments on reservation problems. As impediments in our procedures, regulations or statutes are identified which limit our ability to work effectively with Tribes consistent with this Policy, we will seek to remove those impediments.

5. THE AGENCY, IN KEEPING WITH THE FEDERAL TRUST RESPONSIBILITY, WILL ASSURE THAT TRIBAL CONCERNS AND INTERESTS ARE CONSIDERED WHENEVER EPA'S ACTIONS AND/OR DECISIONS MAY AFFECT RESERVATION ENVIRONMENTS.

EPA recognizes that a trust responsibility derives from the historical relationship between the Federal Government and Indian Tribes as expressed in certain treaties and Federal Indian Law. In keeping with that trust responsibility, the Agency will endeavor to protect the environmental interests of Indian Tribes when carrying out its responsibilities that may affect the reservations.

6. THE AGENCY WILL ENCOURAGE COOPERATION BETWEEN TRIBAL, STATE AND LOCAL GOVERNMENTS TO RESOLVE ENVIRONMENTAL PROBLEMS OF MUTUAL CONCERN.

Sound environmental planning and management require the cooperation and mutual consideration of neighboring governments, whether those governments be neighboring States, Tribes, or local units of government. Accordingly, EPA will encourage early communication and cooperation among Tribes, States and local governments. This is not intended to lend Federal support to any one party to the jeopardy of the interests of the other. Rather, it recognizes that in the field of environmental regulation, problems are often shared and the principle of comity between equals and neighbors often serves the best interests of both.

7. THE AGENCY WILL WORK WITH OTHER FEDERAL AGENCIES WHICH HAVE RELATED RESPONSIBILITIES ON INDIAN RESERVATIONS TO ENLIST THEIR INTEREST AND SUPPORT IN COOPERATIVE EFFORTS TO HELP TRIBES ASSUME ENVIRONMENTAL PROGRAM RESPONSIBILITIES FOR RESERVATIONS.

EPA will seek and promote cooperation between Federal agencies to protect human health and the environment on reservations. We will work with other agencies to clearly identify and delineate the roles, responsibilities and relationships of our respective organizations and to assist Tribes in developing and managing environmental programs for reservation lands.

8. THE AGENCY WILL STRIVE TO ASSURE COMPLIANCE WITH ENVIRONMENTAL STATUTES AND REGULATIONS ON INDIAN RESERVATIONS.

In those cases where facilities owned or managed by Tribal Governments are not in compliance with Federal environmental statutes, EPA will work cooperatively with Tribal leadership to develop means to achieve compliance, providing technical support and consultation as necessary to enable Tribal facilities to comply. Because of the distinct status of Indian Tribes and the complex legal issues involved, direct EPA action through the judicial or administrative process will be considered where the Agency determines, in its judgment, that: (1) a significant threat to human health or the environment exists, (2) such action would reasonably be expected to achieve effective results in a timely manner, and (3) the Federal Government cannot utilize other alternatives to correct the problem in a timely fashion.

In those cases where reservation facilities are clearly owned or managed by private parties and there is no substantial Tribal interest or control involved, the Agency will endeavor to act in cooperation with the affected Tribal Government, but will otherwise respond to noncompliance by private parties on Indian reservations as the Agency would to noncompliance by the private sector elsewhere in the country. Where the Tribe has a substantial proprietary interest in, or control over, the privately owned or managed facility, EPA will respond as described in the first paragraph above.

9. THE AGENCY WILL INCORPORATE THESE INDIAN POLICY GOALS INTO ITS PLANNING AND MANAGEMENT ACTIVITIES, INCLUDING ITS BUDGET, OPERATING GUIDANCE, LEGISLATIVE INITIATIVES, MANAGEMENT ACCOUNTABILITY SYSTEM AND ONGOING POLICY AND REGULATION DEVELOPMENT PROCESSES.

It is a central purpose of this effort to ensure that the principles of this Policy are effectively institutionalized by incorporating them into the Agency's ongoing and long-term planning and management processes. Agency managers will include specific programmatic actions designed to resolve problems on Indian reservations in the Agency's existing fiscal year and long-term planning and management processes.

William D. Ruckelshaus

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 8 1984

OFFICE OF
THE ADMINISTRATOR

MEMORANDUM

SUBJECT: Indian Policy Implementation Guidance

FROM: Alvin L. Alm
Deputy Administrator

TO: Assistant Administrators
Regional Administrators
General Counsel

INTRODUCTION

The Administrator has signed the attached EPA Indian Policy. This document sets forth the broad principles that will guide the Agency in its relations with American Indian Tribal Governments and in the administration of EPA programs on Indian reservation lands.

This Policy concerns more than one hundred federally-recognized Tribal Governments and the environment of a geographical area that is larger than the combined area of the States of Maryland, New Jersey, Connecticut, Massachusetts, Vermont, New Hampshire and Maine. It is an important sector of the country, and constitutes the remaining lands of America's first stewards of the environment, the American Indian Tribes.

The Policy places a strong emphasis on incorporating Tribal Governments into the operation and management of EPA's delegable programs. This concept is based on the President's Federal Indian Policy published on January 24, 1983 and the analysis, recommendations and Agency input to the EPA Indian Work Group's Discussion Paper, Administration of Environmental Programs on American Indian Reservations (July 1983).

TIMING AND SCOPE

Because of the importance of the reservation environments, we must begin immediately to incorporate the principles of EPA's Indian Policy into the conduct of our everyday business. Our established operating procedures (including long-range budgetary and operational planning activities) have not consistently focused on the proper role of Tribal Governments or the special legal and political problems of program management on Indian lands. As a result, it will require a phased and sustained effort over time to fully implement the principles of the Policy and to take the steps outlined in this Guidance.

Some Regions and Program Offices have already made individual starts along the lines of the Policy and Guidance. I believe that a clear Agency-wide policy will enable all programs to build on these efforts so that, within the limits of our legal and budgetary constraints, the Agency as a whole can make respectable progress in the next year.

As we begin the first year of operations under the Indian Policy, we cannot expect to solve all of the problems we will face in administering programs under the unique legal and political circumstances presented by Indian reservations. We can, however, concentrate on specific priority problems and issues and proceed to address these systematically and carefully in the first year. With this general emphasis, I believe that we can make respectable progress and establish good precedents for working effectively with Tribes. By working within a manageable scope and pace, we can develop a coordinated base which can be expanded, and, as appropriate, accelerated in the second and third years of operations under the Policy.

In addition to routine application of the Policy and this Guidance in the conduct of our everyday business, the first year's implementation effort will emphasize concentrated work on a discrete number of representative problems through cooperative programs or pilot projects. In the Regions, this effort should include the identification and initiation of work on priority Tribal projects. At Headquarters, it should involve the resolution of the legal, policy and procedural problems which hamper our ability to implement the kinds of projects identified by the Regions.

The Indian Work Group (IWG), which is chaired by the Director of the Office of Federal Activities and composed of representatives of key regional and headquarters offices, will facilitate and coordinate these efforts. The IWG will begin immediately to help identify the specific projects which may be ripe for implementation and the problems needing resolution in the first year.

Because we are starting in "mid-stream," the implementation effort will necessarily require some contribution of personnel time and funds. While no one program will be affected in a major fashion, almost all Agency programs are affected to some degree. I do not expect the investment in projects on Indian Lands to cause any serious restriction in the States' funding support or in their ability to function effectively. To preserve the flexibility of each Region and each program, we have not set a target for allocation of FY 85 funds. I am confident, however, that Regions and program offices can, through readjustment of existing resources, demonstrate significant and credible progress in the implementation of EPA's Policy in the next year.

ACTION

Subject to these constraints, Regions and program managers should now initiate actions to implement the principles of the Indian Policy. The eight categories set forth below will direct our initial implementation activities. Further guidance will be provided by the Assistant Administrator for External Affairs as experience indicates a need for such guidance.

1. THE ASSISTANT ADMINISTRATOR FOR EXTERNAL AFFAIRS WILL SERVE AS LEAD AGENCY CLEARINGHOUSE AND COORDINATOR FOR INDIAN POLICY MATTERS.

This responsibility will include coordinating the development of appropriate Agency guidelines pertaining to Indian issues, the implementation of the Indian Policy and this Guidance. In this effort the Assistant Administrator for External Affairs will rely upon the assistance and support of the EPA Indian Work Group.

2. THE INDIAN WORK GROUP (IWG) WILL ASSIST AND SUPPORT THE ASSISTANT ADMINISTRATOR FOR EXTERNAL AFFAIRS IN DEVELOPING AND RECOMMENDING DETAILED GUIDANCE AS NEEDED ON INDIAN POLICY AND IMPLEMENTATION MATTERS. ASSISTANT ADMINISTRATORS, REGIONAL ADMINISTRATORS AND THE GENERAL COUNSEL SHOULD DESIGNATE APPROPRIATE REPRESENTATIVES TO THE INDIAN WORK GROUP AND PROVIDE THEM WITH ADEQUATE TIME AND RESOURCES NEEDED TO CARRY OUT THE IWG'S RESPONSIBILITIES UNDER THE DIRECTION OF THE ASSISTANT ADMINISTRATOR FOR EXTERNAL AFFAIRS.

The Indian Work Group, (IWG) chaired by the Director of the Office of Federal Activities, will be an important entity for consolidating the experience and advice of the key Assistant and Regional Administrators on Indian Policy matters. It will perform the following functions: identify specific legal, policy, and procedural impediments to working directly with Tribes on reservation problems; help develop appropriate guidance for overcoming such impediments; recommend opportunities for implementation of appropriate programs or pilot projects; and perform other services in support of Agency managers in implementing the Indian Policy.

The initial task of the IWG will be to develop recommendations and suggest priorities for specific opportunities for program implementation in the first year of operations under the Indian Policy and this Guidance.

To accomplish this, the General Counsel and each Regional and Assistant Administrator must be actively represented on the IWG by a staff member authorized to speak for his or her office. Further, the designated representative(s) should be afforded the time and resources, including travel, needed to provide significant staff support to the work of the IWG.

3. ASSISTANT AND REGIONAL ADMINISTRATORS SHOULD UNDERTAKE ACTIVE OUTREACH AND LIAISON WITH TRIBES, PROVIDING ADEQUATE INFORMATION TO ALLOW THEM TO WORK WITH US IN AN INFORMED WAY.

In the first thirteen years of the Agency's existence, we have worked hard to establish working relationships with State Governments, providing background information and sufficient interpretation and explanations to enable them to work effectively with us in the development of cooperative State programs under our various statutes. In a similar manner, EPA managers should try to establish direct, face-to-face contact (preferably on the reservation) with Tribal Government officials. This liaison is essential to understanding Tribal needs, perspectives and priorities. It will also foster Tribal understanding of EPA's programs and procedures needed to deal effectively with us.

4. ASSISTANT AND REGIONAL ADMINISTRATORS SHOULD ALLOCATE RESOURCES TO MEET TRIBAL NEEDS, WITHIN THE CONSTRAINTS IMPOSED BY COMPETING PRIORITIES AND BY OUR LEGAL AUTHORITY.

As Tribes move to assume responsibilities similar to those borne by EPA or State Governments, an appropriate block of funds must be set aside to support reservation abatement, control and compliance activities.

Because we want to begin to implement the Indian Policy now, we cannot wait until FY 87 to formally budget for programs on Indian lands. Accordingly, for many programs, funds for initial Indian projects in FY 85 and FY 86 will need to come from resources currently planned for support to EPA-and State-managed programs meeting similar objectives. As I stated earlier, we do not expect to resolve all problems and address all environmental needs on reservations immediately. However, we can make a significant beginning without unduly restricting our ability to fund ongoing programs.

I am asking each Assistant Administrator and Regional Administrator to take measures within his or her discretion and authority to provide sufficient staff time and grant funds to allow the Agency to initiate projects on Indian lands in FY 85 and FY 86 that will constitute a respectable step towards implementation of the Indian Policy.

5. ASSISTANT AND REGIONAL ADMINISTRATORS, WITH LEGAL SUPPORT PROVIDED BY THE GENERAL COUNSEL, SHOULD ASSIST TRIBAL GOVERNMENTS IN PROGRAM DEVELOPMENT AS THEY HAVE DONE FOR THE STATES.

The Agency has provided extensive staff work and assistance to State Governments over the years in the development of environmental programs and program management capabilities. This assistance has become a routine aspect of Federal/State relations, enabling and expediting the States' assumption of delegable programs under the various EPA statutes. This "front end" investment has promoted cooperation and increased State involvement in the regulatory process.

As the Agency begins to deal with Tribal Governments as partners in reservation environmental programming, we will find a similar need for EPA assistance. Many Regional and program personnel have extensive experience in working with States on program design and development; their expertise should be used to assist Tribal Governments where needed.

6. ASSISTANT ADMINISTRATORS, REGIONAL ADMINISTRATORS AND THE GENERAL COUNSEL SHOULD TAKE ACTIVE STEPS TO ALLOW TRIBES TO PROVIDE INFORMED INPUT INTO EPA'S DECISION-MAKING AND PROGRAM MANAGEMENT ACTIVITIES WHICH AFFECT RESERVATION ENVIRONMENTS.

Where EPA manages Federal programs and/or makes decisions relating directly or indirectly to reservation environments, full consideration and weight should be given to the public policies, priorities and concerns of the affected Indian Tribes as expressed through their Tribal Governments. Agency managers should make a special effort to inform Tribes of EPA decisions and activities which can affect their reservations and solicit their input as we have done with State Governments. Where necessary, this should include providing the necessary information, explanation and/or briefings needed to foster the informed participation of Tribal Governments in the Agency's standard-setting and policy-making activities.

7. ASSISTANT AND REGIONAL ADMINISTRATORS SHOULD, TO THE MAXIMUM FEASIBLE EXTENT, INCORPORATE TRIBAL CONCERNS, NEEDS AND PREFERENCES INTO EPA'S POLICY DECISIONS AND PROGRAM MANAGEMENT ACTIVITIES AFFECTING RESERVATIONS.

It has been EPA's practice to seek out and accord special consideration to local interests and concerns, within the limits allowed by our statutory mandate and nationally established criteria and standards. Consistent with the Federal and Agency policy to recognize Tribal Governments as the primary voice for expressing public policy on reservations, EPA managers should, within the limits of their flexibility, seek and utilize Tribal input and preferences in those situations where we have traditionally utilized State or local input.

We recognize that conflicts in policy, priority or preference may arise between States and Tribes as it does between neighboring States. As in the case of conflicts between neighboring States, EPA will encourage early communication and cooperation between Tribal and State Governments to avoid and resolve such issues. This is not intended to lend Federal support to any one party in its dealings with the other. Rather, it recognizes that in the field of environmental regulation, problems are often shared and the principle of comity between equals often serves the interests of both.

Several of the environmental statutes include a conflict resolution mechanism which enables EPA to use its good offices to balance and resolve the conflict. These procedures can be applied to conflicts between Tribal and State Governments that cannot otherwise be resolved. EPA can play a moderating role by following the conflict resolution principles set by the statute, the Federal trust responsibility and the EPA Indian Policy.

8. ASSISTANT ADMINISTRATORS, REGIONAL ADMINISTRATORS AND THE GENERAL COUNSEL SHOULD WORK COOPERATIVELY WITH TRIBAL GOVERNMENTS TO ACHIEVE COMPLIANCE WITH ENVIRONMENTAL STATUTES AND REGULATIONS ON INDIAN RESERVATIONS, CONSISTENT WITH THE PRINCIPLE OF INDIAN SELF-GOVERNMENT.

The EPA Indian Policy recognizes Tribal Governments as the key governments having responsibility for matters affecting the health and welfare of the Tribe. Accordingly, where tribally owned or managed facilities do not meet Federally established standards, the Agency will endeavor to work with the Tribal leadership to enable the Tribe to achieve compliance. Where reservation facilities are clearly owned or managed by private parties and there is no substantial Tribal interest or control involved, the Agency will endeavor to act in cooperation with the affected Tribal Government, but will otherwise respond to noncompliance by private parties on Indian reservations as we do to noncompliance by the private sector off-reservation.

Actions to enable and ensure compliance by Tribal facilities with Federal statutes and regulations include providing consultation and technical support to Tribal leaders and managers concerning the impacts of noncompliance on Tribal health and the reservation environment and steps needed to achieve such compliance. As appropriate, EPA may also develop compliance agreements with Tribal Governments and work cooperatively with other Federal agencies to assist Tribes in meeting Federal standards.

Because of the unique legal and political status of Indian Tribes in the Federal System, direct EPA actions against Tribal facilities through the judicial or administrative process will be considered where the Agency determines, in its judgment, that: (1) a significant threat to human health or the environment exists, (2) such action would reasonably be expected to achieve effective results in a timely manner, and (3) the Federal Government cannot utilize other alternatives to correct the problem in a timely fashion. Regional Administrators proposing to initiate such action should first obtain concurrence from the Assistant Administrator for Enforcement and Compliance Monitoring, who will act in consultation with the Assistant Administrator for External Affairs and the General Counsel. In emergency situations, the Regional Administrator may issue emergency Temporary Restraining Orders, provided that the appropriate procedures set forth in Agency delegations for such actions are followed.

9. ASSISTANT ADMINISTRATORS, REGIONAL ADMINISTRATORS AND THE GENERAL COUNSEL SHOULD BEGIN TO FACTOR INDIAN POLICY GOALS INTO THEIR LONG-RANGE PLANNING AND PROGRAM MANAGEMENT ACTIVITIES, INCLUDING BUDGET, OPERATING GUIDANCE, MANAGEMENT ACCOUNTABILITY SYSTEMS AND PERFORMANCE STANDARDS.

In order to carry out the principles of the EPA Indian Policy and work effectively with Tribal Governments on a long-range basis, it will be necessary to institutionalize the Agency's policy goals in the management systems that regulate Agency behavior. Where we have systematically incorporated State needs, concerns and cooperative roles into our budget, Operating Guidance, management accountability systems and performance standards, we must now begin to factor the Agency's Indian Policy goals into these same procedures and activities.

Agency managers should begin to consider Indian reservations and Tribes when conducting routine planning and management activities or carrying out special policy analysis activities. In addition, the IWG, operating under the direction of the Assistant Administrator for External Affairs and with assistance from the Assistant Administrator for Policy, Planning and Evaluation, will identify and recommend specific steps to be taken to ensure that Indian Policy goals are effectively incorporated and institutionalized in the Agency's procedures and operations.

Attachment

Washington & New York (1938), p. 329.

The Rules make it clear that it is "differing occurrences or transactions which form the basis of separate units of judicial action." Atwater v. North American Coal Corp. (CCA 2d) 111 F (2d) 125, 126. And see Moore, op. cit., 92-101; 49 Yale L. J. 1476. If a judgment has been entered which terminates the action with respect to such a claim, it is final for purposes of appeal under § 128 of the Judicial

*[286]

Headnote 2 *Code. The judgment here in question meets that test. The claim against respondent on the promissory note was unrelated to the claim on the contract not to change the will. Those two claims arose out of wholly separate and distinct transactions or engagements. And the question as to Hamer's liability to account to petitioner would arise only in the event that the claim on the contract not to change the will was sustained. Hence no question is presented here as respects the appealability of a judgment dismissing a complaint as to one of several defendants alleged to be jointly liable on the same claim. See Hunteman v. New Orleans Public Serv. (CCA 5th) 119 F(2d) 465. After the entry of the judgment on Count II, the claim based on the contract not to change the will was terminated and could not be affected by any action which the Court might take as respects the remaining claims. Nothing remained to be done except appeal.

The judgment therefore was final. Reversed.

SEMINOLE NATION, Petitioner,

v.

UNITED STATES.

(316 US 286-309.)

Claims, § 26 — Indian claims under treaty — release — diversion of money to feed destitute Indians during Civil War.

1. The provision of Art. VIII. of the Treaty of March 21, 1866 (14 Stat. at L. 755), that the stipulations of said treaty should be a full settlement of all expenditures by the United States for "annuities" in clothing and feeding refugee and destitute Indians of the Seminole Nation "since the diversion of annuities for that purpose" as a result of the Civil War, constitutes a release of, and a good defense to, a subsequent claim by the Seminoles for a deficiency in annual amounts agreed to be paid to them by the United States under Art. VIII. of the Treaty of August 7, 1856 (11 Stat. at L. 699), where the deficiency was due to the diversion of such amounts by the United States for the purpose of feeding refugee and destitute Indians during the Civil War; and it is immaterial for the purpose whether the diversion was from funds of the United States or from funds of the Seminole Nation itself, such distinction being of importance, under the Treaty of March 21, 1866, only in cases where a "ratification," rather than a release, is relied on.

Claims, § 26 — treaty claims of Indians — school funds — unauthorized payment to tribal treasurer.

2. The fact that, by showing disbursements to Seminole schools by the tribal treasurer in excess of amounts otherwise required to be expended by him for school maintenance, it is established that such schools must have actually received the benefit of money paid by the United States to the tribal treasurer in satisfaction of its obligation, under Art. III. of the Treaty of March 21, 1866 (14 Stat. at L. 755), to make annual payments to the Seminoles for the support of schools, is enough to show a discharge of such obligation, and constitutes a good defense to a subsequent claim by the Seminoles for a deficiency in such annual payments, even assuming that the tribal treasurer was without authority to receive the payments made to him.

Indians, § 12 — annual amounts due under treaty — payment to Indian Agent.

3. Annual payments due from the United States, under Art. III. of the Treaty of March 21, 1866 (14 Stat. at L. 755), for the support of Seminole schools may, under § 11 of the Act of April 26, 1906 (34 Stat. at L. 137), properly be paid to the United States Indian Agent for the Seminoles.

ANNOTATION REFERENCES.

1. Generally as to status and rights of Indians, see annotation in 8 L ed 484.

2. As to conclusiveness of findings of fact on appeal from Court of Claims, see annotation in 62 L ed 89[illegible]

*[296]

tunes, while the other *members entitled to share in the tribal income received little benefit therefrom."

It is a well established principle of equity that a third party who pays money to a fiduciary for the benefit of the beneficiary, with knowledge that the fiduciary intends to misappropriate the money or otherwise be false to his trust, is a participant in the breach of trust and liable therefor to the beneficiary. Cf. Duncan v. Jaudon, 15 Wall.(US) 165, 21 L ed 142; Manhattan Bank v. Walker, 130 US 267, 32 L ed 959, 9 S Ct 519. See 4 Bogert, Trusts & Trustees (1935) §§ 901, 955; 3 Scott, Trusts (1939) § 321.1; Am. Law Inst. Restatement, Trusts (1935), Vol. 2, § 321. The Seminole General Council, requesting the annuities originally intended for the benefit of the individual members of the tribe, stood in a fiduciary capacity to them. Consequently, the payments at the request of the Council did not discharge the treaty obligation if the Government, for this purpose the officials administering Indian affairs and disbursing Indian moneys, actually knew that the Council was defrauding the members of the Seminole Nation.

Headnote 9

Furthermore, this Court has recognized the distinctive obligation of trust incumbent upon the Government in its dealings with these dependent and sometimes exploited people. E.g. Cherokee Nation v. Georgia, 5 [illegible] (US) 1, 8 L ed 25; United Stat[illegible] Kagama, 118 US 375, 30 L ed 2[illegible] S Ct 1109; Choctaw Nation v. Un[illegible] States, 119 US 1, 30 L ed 305[illegible] Ct 75; United States v. Pelican[illegible] US 442, 58 L ed 676, 34 S Ct [illegible] United States v. Creek Nation, [illegible] US 103, 79 L ed 1331, 55 S Ct [illegible] Tulee v. Washington, 315 US [illegible] ante, 1115, 62 S Ct 862, No. 318 [illegible] Term. In carrying out its treat[illegible] ligations with the Indian tribes, Government is something more t[illegible] mere contracting party. Under [illegible] mane and self-imposed policy, w[illegible] has found expression in many a[illegible]

Headnote 10

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Congress[11] and numerous decis[illegible] of this Court, it has charged [illegible] with moral obligations of the hig[illegible] est responsibility and trust. Its co[illegible] duct, as disclosed in the acts of th[illegible] who represent it in dealings with [illegible] Indians, should therefore be jud[illegible] by the most exacting fiduci[illegible] standards. Payment of funds at [illegible] request of a tribal council which [illegible] the knowledge of the Governm[illegible] officers charged with the admin[illegible] tration of Indian affairs and [illegible] disbursement of funds to sati[illegible] treaty obligations, was composed [illegible] representatives faithless to the[illegible] own people and without integri[illegible] would be a clear breach of the Go[illegible] ernment's fiduciary obligation.[12] [illegible] those were the circumstances, eith[illegible] historically notorious so as to [illegible] judicially noticed or otherwise op[illegible]

[11] There is no better example of this than the facts of the instant case. Despite the lapse of time and the bar of the statute of limitations, Congress authorized the Court of Claims to adjudicate all legal and equitable claims, arising under statute or treaty, which the Seminole Nation may have against the United States. And after an adverse decision by this Court on jurisdictional grounds, 299 US 417, 81 L ed 316, 57 S Ct 283, Congress again removed the bar. 50 Stat. at L. 650, chap. 651.

[12] As was well said by Chief Judge (later Mr. Justice) Cardozo in Meinhard v. Salmon, 249 NY 458, 464, 164 NE 545, 546, 62 ALR 1:

"Many forms of conduct permissible [illegible] a workaday world for those acting [illegible] arm's length, are forbidden to th[illegible] bound by fiduciary ties. A trustee is [illegible] to something stricter than the moral[illegible] the market place. Not honesty alone, [illegible] the punctilio of an honor the most sen[illegible] tive, is then the standard of behavior. [illegible] to this there has developed a tradi[illegible] that is unbending and inveterate. [illegible] compromising rigidity has been the at[illegible] tude of courts of equity when petitions [illegible] to undermine the rule of undivided l[illegible] alty by the 'disintegrating erosion' [illegible] particular exceptions. . . . Only [illegible] has the level of conduct for fiduciari[illegible] been kept at a level higher than [illegible] trodden by the crowd."

proof, when the $66,422.64 was over at the request of the minole General Council during period from 1870 to 1874, the minole Nation is entitled to re- er that sum, minus such amounts were actually expended for the efit of the Nation by the Council. Having formulated the proper rule law, we must examine the facts

*[298]

of this case. Although the Court of *Claims jurisdiction of this issue, for an action for breach of fidu- ciary duty growing out of treaty obligations clearly an equitable claim within meaning of the jurisdictional act, Stat. at L. 133, chap. 162, the did not consider, and hence e no findings on this issue. We the issue material. During period in question, 1870–1874, administration of Indian affairs and the disbursement of Indian moneys were lodged with the Department of the Interior. The Commissioner of Indian Affairs, under the general supervision of the Secretary of the Interior, actively supervised these matters.[13] There are ample indications in the record before us that the Seminole General Council was mulcting the Nation and that the proper Government officials may well have had knowledge thereof at the time some, at least, of the payments were made. For about this time the Commissioner of Indian Affairs received several warnings from his subordinates that "injustice to the majority" of the Seminoles existed,[14] that the chiefs were in the habit "of taking out what

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amount they *chose" from the annuities,[15] that the Seminoles were "in bad hands,"[16] and that the chiefs intended "to 'gobble' the next

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See Rev. Stat. §§ 441, 444, 445, 463, 2089, 5 USCA §§ 485, 487, 25 USCA 8, 118. Cf. Act of April 15, 1874, 97, 18 Stat. at L. 29.

On December 6, 1869, the United Indian Agent for the Seminoles to the Commissioner of Indian Af- as follows:

would state that they are in the of calling Councils, for any little that may arise, and spending from 15 days without effecting anything ever, which would be of the least ce to the nation [Seminole], except pending the funds; which are taken of those ordered paid per 'capita' to tion.

find that it has been the custom fore for the Chiefs to order how payment should be made, but at the time making return to the depart- upon rolls as if it had been paid capita.'

think that it is an injustice to the rity of the people, comprising this n and the only way to avoid un- sary expenditure of money for cils, etc. which are of but little ben- to the nation (for example the last ll held cost the nation $700.00 for alone and did no business) is for partment to give special orders in ence as to what amount shall be over to the chiefs and the bal- paid to heads of families in person."

[13] In his annual report to the Commissioner of Indian Affairs, dated September 1, 1870, the United States Indian Agent for the Seminoles said:

"Per capita payments are, in some instances, I think, a great evil; but as the system cannot be abolished, this nation [Seminole] having no constitutional government, and until such a form of government be adopted, I would recommend that the provisions of the treaty be rigidly enforced, and no moneys allowed to be paid except to the heads of families. Heretofore, as I have reported, the chiefs have been in the habit of taking out what amount they chose, allowing the balance to be paid per capita. This is an injustice, as few receive the bulk of their annuities." Report of the Secretary of the Interior, 41st Cong., 3d Sess. (1870–1871), vol. 1, pp. 766, 767.

[16] The report of John P. C. Shanks, Special Commissioner, to the Commissioner of Indian Affairs, dated August 9, 1875, states:

"These claims are enormous in amount, and show too clearly that the Seminoles are in bad hands. These parties who had these claims (except Harjo, who is an assignee) are or have been officials in the Nation. Robert Johnson is a negro, and is interpreter to the Chief; Chupco is present chief; John Jumper was former chief; James Factor, a half breed, is treasurer; E. J. Brown

defraud" in the context of this statute, do not require more than the defendants have, by artifice and deceit, sought to cause the deceived person to follow some course he would not have pursued but for the deceitful conduct.[3] If the statutory language alone had been used, the indictment would have been proof against demurrer under Lamar v. United States, 241 US 103, 116, 60 L ed 912, 917, 36 S Ct 535; Pierce v. United States, 314 US 306, 307, 86 L ed 226, 228, 62 S Ct 237; and this indictment has merely been made more elaborate than that in the Lamar Case by the addition of a description of the nature of the alleged fraud. In any case, this branch of the statute covers the acquisition of information by impersonation although the information may be wholly valueless to its giver. This result is required by United States v. Barnow, supra (239 US 80, 60 L ed 158, 36 S Ct 19) in which we held that the purpose of the statute was "to maintain the general good repute and dignity of the [government] service itself," and cited with approval cases which, interpreting an analogous statute, said: "it is not essential to charge or prove an actual financial or property loss to make a case under the statute." Haas v. Henkel, 216 US 462, 480, 54 L ed 569, 577, 30 S Ct 249, 17 Ann Cas 1112; United States v. Plyler, 222 US 15, 56 L ed 70, 32 S Ct 6.

The first clause of this statute, the only one under consideration here, defines one offense; the second clause

*[705]

defines *another. While more than mere deceitful attempt to affect the course of action of another is required under the second clause of the statute, which speaks of an intent to obtain a "valuable thing," the very absence of these words of limitation in the first portion of the act persuades us that under it, a person may be defrauded although he parts with something of no measurable value at all.

Reversed.

Mr. Justice Rutledge concurs in the result.

Mr. Justice Roberts believes that the judgment should be affirmed.

Mr. Justice Murphy took no part in the consideration or decision of this case.

[3] For a more limited construction of similar words in a different statutory context see United States v. Cohn, 270 US 339, 70 L ed 616, 46 S Ct 251.

87 L ed 1094

BOARD OF COUNTY COMMISSIONERS OF THE COUNTY OF CREEK, STATE OF OKLAHOMA, a Municipal Corporation, et al., Petitioners,

v.

EVELYN SEBER et al.

(318 US 705–723.)

Taxes, § 130 — exemption of land owned by Indian — availability to life tenant.

1. The tax immunity created by § 2 of the Act of June 30, 1936, 49 Stat 1542, in the case of lands the title to which is held by an Indian subject to restriction against alienation or encumbrances except with the approval of the Secretary of the Interior, and purchased out of trust or restricted funds of such Indian, is not limited to lands purchased for landless Indians, and extends to the case of an Indian having a life estate only, who as life tenant is obligated by local law to pay the taxes.

[*See annotation reference*, 1.]

Taxes, § 130 — exemption of land owned by Indian — availability to transferee of original purchaser.

2. The exemption from taxation granted by the provisions of the Act of May 19, 1937, declaring all homesteads previously purchased out of the trust or restricted funds of individual Indians, shall be nontaxable until otherwise directed by Congress providing that the title thereto shall be held subject to

ANNOTATION REFERENCE.

1. As to duty of life tenant to pay taxes, and resulting rights and liabilities, see annotation in 17 ALR 1384; 94 ALR 311; and 126 ALR 862.

ed and admittedly ambiguous statutes governing the tax status of restricted allotted Creek lands. Respondents received the land, which they have designated as a homestead, subject to restrictions of indefinite duration which the Secretary of the Interior had authority to impose.[14] It seems only fair, as the clear words of the 1937 Act provide, that the tax exemption should follow the restrictions and continue so long as they do, unless Congress meanwhile provides to the contrary. Even if the 1937 Act were ambiguous, we think this interpretation should be taken. Cf. United States v. Reily, 290 US 33, 39, 78 L ed 154, 157, 54 S Ct 41.

It is argued, however, that the 1936 Act created only a personal exemption, and the 1937 Act gave no more because it was an amendment to the 1936 Act intended solely to limit the unnecessarily broad exemption of that Act. It is true that this was the avowed purpose of the 1937 Act,[15] but it does not follow that the 1937 Act

*[714]

grants *but a personal exemption or else allows the exemption only until 1956. While the question need not be decided, it is appropriate to notice that the purpose of the 1936 Act makes it at least doubtful whether that Act afforded only a personal exemption. Assuming, however, that it did, there is nothing to indicate that the 1937 Act, contrary to its terms, incorporated the same limitation. The applicable committee report sheds no light one way or another.[16] There is no inconsistency between the object of the 1937 Act to limit the sweeping exemption of all lands, granted by the 1936 Act, to homestead lands, and a purpose to enlarge the exemption accorded to the relatively small amount of homestead lands so that it would apply to restricted homesteads passing to Indian heirs or grantees. The fact that extensive charges in language were made in the 1937 Act is persuasive, moreover, that a change in sense from the presumed personal exemption of the 1936 Act was intended. If the only object of the 1937 Act was to limit the application of the 1936 Act (with its assumed personal exemption) to homesteads, that purpose could have been accomplished simply by substituting the word "homesteads" for the word "lands." We cannot accept the view that the substantial changes in language were only matters of style. Furthermore, it has not been suggested that respondents, as takers from the original purchaser, were incompetent to designate the lands as a homestead under the Act. If they could do that, as we and apparently the Secretary of the Interior think they could,[17] it would seem to follow that having properly designated their homestead under the Act, they are entitled to the tax exemption afforded restricted homesteads by the Act until Congress otherwise directs.

Headnote 3

*[715]

*The Acts of 1936 and 1937 are constitutional. From almost the beginning the existence of Federal power to regulate and protect the Indians and their property against interference even by a state has been recognized. Cf. Worcester v. Georgia, 6 Pet(US) 515, 8 L ed 483. This power is not expressly granted in so many words by the Constitution, except with respect to regulating commerce with the Indian tribes, but its existence cannot be doubted. In the exercise of the war and treaty powers, the United States overcame the Indians and took possession of their lands, sometimes by force, leaving them an uneducated, helpless and dependent people needing protection against the selfishness of others and their own improvidence. Of necessity the United States assumed the duty of furnishing that protection and with it the authority to do all that was required

Headnote 4

[14] See supra, note 3.

[15] See H Rep 562, S Rep 332, 75th Cong 1st Sess.

[16] S Rep 332, 75th Cong 1st Sess.

[17] The Secretary approved respondents' designation. See supra, note 12.

to perform that obligation and to prepare the Indians to take their place as independent, qualified members of the modern body politic. This was classically summarized in United States v. Kagama, 118 US 375, 384, 385, 30 L ed 228, 231, 6 S Ct 1109:

"From their (the Indians') very weakness and helplessness, so largely due to the course of dealing of the Federal Government with them and the treaties in which it has been promised, there arises the duty of protection, and with it the power. This has always been recognized by the Executive and by Congress, and by this court, whenever the question has arisen.

. . . . . .

"The power of the General Government over these remnants of a race once powerful, now weak and diminished in numbers, is necessary to their protection, . . . It must exist in that government, because it never has existed anywhere else, because the theater of its exercise is within the geographical limits of the United States, because it has never been denied, and because it alone can enforce its laws on all the tribes."

*[716]

*After 1871 Congress turned from regulating Indian affairs by treaties to regulation by agreement and legislation. The plenary character of this legislative power over various phases of Indian affairs has been recognized on many occasions.[18] One aspect of this legislative program commenced with the General Allotment Act of [February 8] 1887, 24 Stat 388, c 119, 25 USCA § 331, 5 FCA title 25, § 331, followed by various other allotment acts dealing with specific tribes,[19] whereby Congress embarked upon a policy of assimilating the Indians through dissolution of tribal governments and the compulsory individualization of Indian land.[20] To lessen the difficulty of the period of transition and to protect the allottees' interest in their lands, Congress, by the device of the trust patent or a restricted fee, denied them the power to alienate or encumber their lands for fixed periods of time, subject to extension—denials which were sustained as proper exercises of congressional power. Marchie Tiger v. Western Invest. Co. 221 US 286, 310, 317, 55 L ed 738, 747, 750, 31 S Ct

*[717]

578; Brader v. James, 246 *US 88, 96, 62 L ed 591, 595, 38 S Ct 285; Sunderland v. United States, 266 US 226, 233, 234, 69 L ed 259, 261, 262, 45 S

[18] See United States v. Kagama, 118 US 375, 30 L ed 228, 6 S Ct 1109, supra; Choctaw Nation v. United States, 119 US 1, 27, 30 L ed 306, 314, 7 Ct 75; Stephens v. Cherokee Nation, 174 US 445, 486, 43 L ed 1041, 1056, 19 S Ct 722; Lone Wolf v. Hitchcock, 187 US 553, 566–568, 47 L ed 299, 306, 307, 23 S Ct 216; Marchie Tiger v. Western Invest. Co. 221 US 286, 310–317, 55 L ed 738, 747, 750, 31 S Ct 578; United States v. Sandoval, 231 US 28, 45–47, 58 L ed 107, 113, 114, 34 S Ct 1; Brader v. James, 246 US 88, 96, 62 L ed 591, 595, 38 S Ct 285; Sunderland v. United States, 266 US 226, 233, 234, 69 L ed 259, 261, 262, 45 S Ct 64; United States v. Ramsey, 271 US 467, 469, 471, 70 L ed 1039–1041, 46 S Ct 559; United States v. McGowan, 302 US 535, 538, 539, 82 L ed 410, 412, 413, 58 S Ct 286; Jackson County v. United States, 308 US 343, 349, 84 L ed 313, 316, 60 S Ct 285.

[19] Wosey John Deere received her allotment under an agreement negotiated with the Creeks by the Dawes Commission and incorporated into the Act of March 1, 1901, 31 Stat 861, c 676, as amended by the supplemental agreement of June 30, 1902, 32 Stat 500, c 1323. See also § 19 of the Act of April 26, 1906, 34 Stat 137, 144, c 1876; Act of May 27, 1908, 35 Stat 312, c 199; and Act of May 10, 1928, 45 Stat 495, c 517.

[20] Allotments in severalty were halted by the Wheeler-Howard Act of June 18, 1934, 48 Stat 984, c 576, 25 USCA § 461, 5 FCA title 25, § 461, and by the Oklahoma Welfare Act of June 26, 1936, 49 Stat 1967, c 831, 25 USCA § 501, 5 FCA title 25, § 501. These and other recent statutes reflect a change in policy, the theory of which is that Indians can better meet the problems of modern life through corporate, group, or tribal action, rather than as assimilated individuals.

[415 US 199]

ROGERS C. B. MORTON, Secretary of the Interior, Petitioner,

v.

RAMON RUIZ et ux.

415 US 199, 39 L Ed 2d 270, 94 S Ct 1055

[No. 72-1052]

Argued November 5 and 6, 1973. Decided February 20, 1974.

SUMMARY

Full-blooded Papago Indians, husband and wife, who lived off the Indian reservation in an Indian community near the reservation, and who maintained close economic and social ties with the reservation, not having been assimilated into general society, sought general assistance benefits from the Bureau of Indian Affairs under the Snyder Act (25 USCS § 13), when the husband was left without income because of a strike at the mine where he worked. Under a rule in its manual limiting eligibility for general assistance benefits to Indians living "on reservations," the Bureau denied such request for benefits, and the husband and wife then instituted the instant purported class action in the United States District Court for the District of Arizona, claiming entitlement to general assistance benefits as a matter of statutory interpretation, and also challenging the constitutionality of the Bureau's eligibility rule. The District Court granted summary judgment for the defendant (the Secretary of the Interior), but the United States Court of Appeals for the Ninth Circuit reversed, holding that the Bureau's residency limitation was inconsistent with the Snyder Act, and that Congressional action in appropriating funds for the general assistance program did not ratify the Bureau's residency limitation (462 F2d 818).

On certiorari, the United States Supreme Court affirmed and remanded. In an opinion by BLACKMUN, J., expressing the unanimous view of the court, it was held that general assistance benefits to needy Indians under the Snyder Act could not be denied to Indians who lived in an Indian community near their native reservation, and who maintained close economic and social ties with the reservation and had not been assimilated into general society, notwithstanding the "on reservations" residency limitation in the Bureau's manual, and notwithstanding the Bureau's

SUBJECT OF ANNOTATION

Beginning on page 942, infra

Supreme Court's view as to weight and effect to be given, on subsequent judicial construction, to prior administrative construction of statute

Briefs of Counsel, p 940, infra.

manifestation of this alleged policy of restricting general assistance to those directly on the reservations is the material in the Manual which is, by BIA's own admission, solely an internal-operations brochure intended to cover policies that "do not relate to the public." Indeed, at oral argument the Government conceded that for this to be a "real legislative rule," itself endowed with the force of law, it should be published in the Federal Register. Tr of Oral Arg 20.

Where the rights of individuals are affected, it is incumbent upon agencies to follow their own procedures. This is so even where the internal procedures are possibly more rigorous than otherwise would be required. Service v Dulles, 354 US 363, 388, 1 L Ed 2d 1403, 77 S Ct 1152 (1957); Vitarelli v Seaton, 359 US 535, 539–540, 3 L Ed 2d 1012, 79 S Ct 968 (1959). The BIA, by its Manual, has declared that all directives that "inform the public of privileges and benefits available" and of "eligibility requirements" are among those to be published. The requirement that, in order to receive general assistance, an Indian must reside directly "on" a reservation is clearly an important substantive policy that fits within this class of directives. Before the BIA may extinguish the entitlement of these otherwise eligible beneficiaries, it must comply, at a minimum, with its own internal procedures.

The Secretary has presented no reason why the requirements of the Administrative Procedure Act could not or should not have been met. Cf. SEC v Chenery Corp., 332 US 194, 202, 91 L Ed 1995, 67 S Ct 1575 (1947). The BIA itself has not attempted to defend its rule as a valid exercise of its "legislative power," but rather depends on the argument that Congress itself has not appropriated funds for

[415 US 236]

Indians not directly on the reservations. The conscious choice of the Secretary not to treat this extremely significant eligibility requirement, affecting rights of needy Indians, as a legislative-type rule, renders it ineffective so far as extinguishing rights of those otherwise within the class of beneficiaries contemplated by Congress is concerned.

[11] The overriding duty of our Federal Government to deal fairly with Indians wherever located has been recognized by this Court on many occasions. See, e. g., Seminole Nation v United States, 316 US 286, 296, 86 L Ed 1480, 62 S Ct 1049 (1942); Board of County Comm'rs v Seber, 318 US 705, 87 L Ed 1094, 63 S Ct 920 (1943). Particularly here, where the BIA has continually represented to Congress, when seeking funds, that Indians living near reservations are within the service area, it is essential that the legitimate expectation of these needy Indians not be extinguished by what amounts to an unpublished ad hoc determination of the agency that was not promulgated in accordance with its own procedures, to say nothing of those of the Administrative Procedure Act. The denial of benefits to these respondents under such circumstances is inconsistent with "the distinctive obligation of

The phrase "within the exterior boundaries of Indian reservations under the jurisdiction of the Bureau of Indian Affairs," when read in conjunction with the BIA's declared jurisdiction before Congress, would seem to include Indians living "near" the reservations. In any event, the cited regulations do not deal with the general assistance program. There is nothing in the Code indicating that a general assistance program exists, to say nothing of the absence of eligibility criteria.

NAVAJO TRIBE OF INDIANS

v.

The UNITED STATES.

No. 49692.

United States Court of Claims.

July 15, 1966.

Suit by Indian tribe seeking additional compensation for oil and gas rights acquired by United States in area within Indian reservation. The Court of Claims, Collins, J., held that lease by Indian tribe of "all oil and gas deposits" under described acreage included helium gas discovered on such leasehold.

Judgment accordingly.

1. Indians ⇐10

In judging conduct of government as to Indian lands, most exacting fiduciary standards must be applied.

2. Indians ⇐10

Department of the Interior had obligation to safeguard property of the Navajo Indians when they were dealing with third parties, and even greater duty existed when Department itself entered into transactions with Indians.

3. Indians ⇐16(6)

Lessor Indian tribe was entitled to recover from the United States damages incurred as result of failure to inform tribe, prior to assignment of 1942 oil and gas lease directly to government, that lessee desired to surrender lease.

4. Indians ⇐27(6)

Where lessor Indian tribe's inability to prove what would have happened if tribe had been consulted prior to assignment of 1942 oil and gas lease directly to government was attributable to failure of government to keep tribe informed, doubts would be resolved in favor of tribe.

5. Indians ⇐16(4)

Lease by Indian tribe of "all oil and gas deposits" under described acreage included helium gas discovered on such leasehold.

See publication Words and Phrases for other judicial constructions and definitions.

6. Mines and Minerals ⇐73

Application of rule that ambiguities in oil and gas leases are to be construed in favor of lessor depends upon circumstances of particular case.

7. Mines and Minerals ⇐77

Forfeiture will not be imposed unless clearly required by terms of oil and gas lease.

8. Indians ⇐16(5)

Where 1923 oil and gas lease by Indian tribe did not expressly call for forfeiture of right to produce gas in event of failure of lessees to pay shut-in rental, sanction of forfeiture could not be imposed upon lessees for failure to pay.

9. Indians ⇐16(6)

Where oil and gas lessees transferred to lessor Indian tribe their rights in specified formations because United States had compensated them for their interests and in order to make possible receipt by government of new lease of such formations, Indian tribe was merely necessary conduit in transfer from lessees to United States, and thus ownership of helium underlying leasehold was not acquired by tribe under transfer agreements.

10. Courts ⇐466

Findings of trial commissioner are presumed to be correct.

11. Indians ⇐27(6)

Record supported trial commissioner's determination that government's estimate as to recoverable amount of helium bearing gas included in oil and gas lease executed by plaintiff Indian tribe was valid.

12. Courts ⇐466

Trial commissioner's evaluation of witnesses is entitled to substantial weight. Court of Claims Rules, rule 66, 28 U.S.C.A.

13. Indians ⇐27(1)

Erroneous calculation of manufacturing allowance, with respect to unit value of helium bearing gas included in oil and gas lease executed by plaintiff Indian tribe as lessor, entitled tribe to appropriate adjustment of consideration

Before COWEN, Chief Judge, JONES, Senior Judge, and LARAMORE, DAVIS, and COLLINS, Judges.

OPINION

COLLINS, Judge.

As the result of a series of transactions beginning in 1942, the United States acquired certain oil and gas rights with respect to the Rattlesnake field, an area within the Navajo Indian Reservation. In this suit, which is based in part upon a special jurisdictional act[1] and in part upon 28 U.S.C. § 1505 (1964), plaintiff seeks additional compensation for those rights.

Three separate claims are presented. The first relates to an oil and gas lease, covering part of the Rattlesnake field, which was originally granted to Continental Oil Company in 1942. Subsequent to the discovery of a reserve of helium-bearing gas, Continental assigned the lease to the United States. Plaintiff asserts that the assignment should have been taken on its behalf. The second claim pertains to a lease, executed in 1923, the subject of which was another part of the Rattlesnake field. Plaintiff contends that the Government took from the tribe, without compensation, ownership of the lessee's interest in the gas deposit underlying the 1923 leasehold.

The basis for the third claim is an agreement, entered into in 1945 by the United States and the Navajo Tribe, which permitted the United States to increase its control over the reserve of helium-bearing gas. This agreement, dated December 1, 1945, became effective on July 1, 1947, after its approval by Congress.[2] Plaintiff takes the position that the consideration which it received pursuant to the agreement was inadequate.

We have concluded, for reasons to be explained, that plaintiff is entitled to recover with respect to the 1942 lease and the 1945 agreement, but that plaintiff's claim as to the 1923 lease must be denied.

The three claims will be discussed separately. Detailed findings of fact were made by the trial commissioner, the late Robert K. McConnaughey. His report, as modified by the court, is set forth infra.

I. *The 1942 Lease.*

[1] Before turning to the precise issues relevant to the assignment of the 1942 lease, we must consider the general assertion of plaintiff that, in judging the conduct of the Government, "the most exacting fiduciary standards" must be applied. Defendant does not challenge this concept as such, and we are of the opinion that plaintiff's view is basically correct.

As indicated in finding 6(a), the United States was responsible for supervision of the affairs of the tribe, including, in particular, supervision of oil and gas leases on tribal property. Numerous cases have expressed the notion that, when dealing with Indian property, the Government may be acting as a "trustee." E. g., Seminole Nation v. United States, 316 U.S. 286, 296, 62 S.Ct. 1049, 86 L.Ed. 1480, 1777 (1942); Menominee Tribe of Indians v. United States, 101 Ct.Cl. 10, 19 (1944). In Oneida Tribe of Indians v. United States, 165 Ct.Cl. 487, cert. denied, 379 U.S. 946, 85 S.Ct. 441, 13 L.Ed.2d 544 (1964), Judge Davis pointed out that it was unnecessary to determine whether the relationship between the tribe and the United States was a trusteeship or guardianship in the technical sense. In any event, the circumstances were such that the United States had a special duty of care regarding the property of the Oneidas. 165 Ct.Cl. at 494. The principle expressed in Oneida Tribe of Indians is pertinent to the present case and especially to the matter of the assignment of the 1942 lease. Cf. Seneca Nation v. United States, 173 Ct.Cl. ——, —— (App. No. 14-63, slip op. p. 7) (December 1965).

[2] Since the Department of the Interior had an obligation to safeguard the

1. Act of June 27, 1947, ch. 158, 61 Stat. 189, as amended by Act of July 29, 1954, ch. 617, 68 Stat. 580.

2. The agreement was approved by Congress on June 27, 1947. See footnote 1.

Attachment P

Final P

NRC/BWIP PROJECT MANAGEMENT MEETING

AUGUST 4, 1986
RICHLAND, WASHINGTON

ATTENDEES

A list of attendees and their organizational affiliations is attached as Enclosure 1.

BACKGROUND

The meeting followed the topics outlined in the agenda (Enclosure 2). Copies of viewgraphs and handouts used by the Department of Energy-Richland Operations Office (DOE/RL) and the Nuclear Regulatory Commission (NRC) are attached as Enclosures 3 & 4.

The NRC objectives for the meeting were: Presentation of the NRC five year plan, identification and agreement on significant pre-Site Characterization Plan (SCP) technical concerns and NRC/DOE interactions needed to address these concerns, and discussion of specific aspects of the site specific procedural agreement including timely release of data, planning and conducting meetings and Appendix 7 assignments.

BWID ORGANIZATION

DOE/RL and Rockwell Hanford Operations (RHO) presented descriptions of their respective organizations. Rockwell has undergone a major restructuring of the organization reflecting a greater emphasis on site characterization as opposed to a pre-selection mode of operation. (See Enclosure 3 handouts for more specific details.)

NRC/WASTE MANAGEMENT ORGANIZATION

The NRC presented a description of the Division of Waste Management organization. As a matrix, the Repository Projects branch directs and integrates repository related activities with support provided by the Geotechnical, Engineering, and Policy and Program Control branches. Technical support is also provided at this time by numerous technical assistance contractors. Also involved in the program are the Office of the General Counsel, Inspection and Enforcement and Research together with the Advisory Committee on Reactor Safeguards.

NRC PLANS

The NRC presented its five year plan and the status of both generic and site specific planning efforts. Basically, the five year plan lays out the NRC's strategy and objectives from now until the filing of the license application. The primary objective of the plan is to provide for an aggressive program focused on those activities necessary to provide sufficient licensing guidance to the DOE and sufficient interaction with the DOE, States, Indian tribes and other agencies in order to identify and, to the extent possible, resolve as many licensing open items as possible prior to the licensing hearing.

The NRC believes this open item identification and resolution process should start now rather than waiting until after the SCP has been issued. The DOE observed that considering their limited manpower and aggressive program to meet programmatic milestones and schedules specified by the Nuclear Waste Policy Act (NWPA), they may not have time to meet as frequently prior to release of the SCP as proposed by the NRC. Additionally, the DOE may disagree with the NRC over the significance of particular concerns. The NRC responded that it is the DOE's call as to whether we have interactions early on or after the SCP. Waiting until after the SCP may have more of an impact on their program since the amendment to 10CFR Part 60 will require the DOE to consider the NRC's comments on the shaft portions of the SCP prior to starting shaft construction. However, DOE intends to provide NRC discrete draft chapters of the SCP prior to release of the assembled SCP document to facilitate their review.

The NRC also pointed out that they are developing technical positions on acceptable methodologies as an additional mechanism for resolving open items but that they were not precluding the potential of rule making as an additional resolution process. The DOE asked if the rule making process would be negotiated. The NRC responded that they are considering all options at this time but that any rule making process would not go forward without the support of the DOE.

The primary focus of the NRC site specific planning exercise has been to identify significant technical concerns which the NRC and DOE need to work towards resolution prior to SCP issuance thereby avoiding potential major review and construction delays. A listing of significant Pre-SCP technical concerns and proposed interactions for resolving these concerns was presented and discussed. (See Enclosure 4.) It was pointed out by the NRC that this listing does not contain all concerns but are considered to be those which should be addressed and, to the extent practicable, resolved prior to issuance of the SCP. The DOE agreed that interactions in the form of workshops are needed in the areas of hydrology and performance assessment.

They further questioned the logistics of having so many interactions in such a short period of time. The NRC requested that the DOE review the concerns and proposed interactions and provide feedback as to what interactions they will be able to support. DOE agreed to do this in coordination with DOE-HQ. The NRC also indicated that they need to know the DOE's milestones and schedules to more effectively plan interactions that DOE will be ready to participate in.

The DOE indicated that they need to be informed of what the NRC activities and milestones are in the area of guidance document preparation. The NRC stated that they are currently completing a new system which will provide for this type of information and agreed to send copies to DOE on a regular basis. This system should be completed in the near future.

The NRC requested feedback from the DOE on GTP's that are being issued. The DOE indicated that several GTP's are under review at the present time and that comments would be forwarded via headquarters as they are completed.

The NRC emphasized the need for identifying resolution of existing NRC concerns that have been raised through past interactions and reviews of the Site Characterization Report (SCR), Draft Environmental Assessment (DEA) and various other documents. The DOE noted that some issues identified in the past may no longer be valid. The NRC noted that these concerns should be identified and agreement reached by all participants that these concerns have or have not been resolved. The DOE responded that such a review of concerns is desirable and will be addressed for resolution during site characterization.

BWID PLANS (SCP)

The DOE presented the current SCP schedule which now proposes issuance to the public in March 1987. DOE indicated that drafts could be made available to the NRC after the second draft stage which reflects DOE/RL, DOE/HQ and Rockwell review (See Enclosure 3.) The second drafts are scheduled to be released between mid October and the first of December 1986.

The site characterization semiannual document is envisioned by the DOE to be a progress report showing changes being made in test plans and overall progress to date. They do not plan to provide actual page changes to the SCP itself. There was agreement by the DOE and NRC that additional discussion is necessary concerning the scope, and content and timing of the document.

The DOE presented an explanation of its issue resolution strategy process which provides the mechanism for identifying issues and resolving them. (See Enclosure 3.) The NRC noted that the approach to issue resolution was to use logical scenarios rather

than conservative scenarios. The NRC made the observation that this type of approach may put the DOE at risk if the scenarios are incorrect. DOE responded that there is risk involved no matter what approach is taken. The NRC considers it needs to review what DOE considers to be logical and provide feedback to DOE as to its appropriateness. DOE indicated that a first draft of the document is scheduled for release by the end of September 1986, and it may be possible to release it to NRC at that time.

Additionally, the sample licensing strategy for Issue No. 1.4(see Enclosure 3) listed several design assumptions which may not reflect uncertainties. NRC considers this could potentially lead to an insufficient testing scope to provide bases for future assessment methodologies. In this regard. the NRC did not necessarily agree with the design assumptions as presented in this example.

RELEASE OF DATA AND DOCUMENTATION:

DOE presented a description of the Basalt Records Management Center (BRMC) (see Enclosure 3). DOE noted that its center would not have all the recorded information pertinent to the project, but some information generated outside the DOE sponsored work would be contained in a reference library.

DOE noted that only project produced reports are identified in the Document Accessions List; however, most records created by Rockwell are sent to the BRMC for storage. Contractor records, for example, data concerning instrument calibration, is not stored in the BRMC, but should be present in individual contractor records systems.

DOE noted that draft documents, which are early revisions to final documents in the BMRC, and other information pertinent to the creation of any given final document (for example, comments and pertinent review comment records) are retained in BMRC and can be made available upon request of a program participant once a final document is issued.

The availability of draft documents prior to completion of the final was noted by NRC as a desirable condition to allow early review and feedback to DOE. DOE noted that such feedback would be disruptive and did not in general concur with the desirability of making draft documents available for NRC review other than to the OR.

NRC noted that availability of drafts for NRC staff review under Appendix 7 and general availability for retention would be the subject of a future NRC DOE/HQ meeting on NRC/DOE interactions.

MEETINGS

The NRC indicated that it was important to have management meetings at regular intervals. DOE agreed that a quarterly time frame is a good target. It was proposed by the NRC that a general type of agenda be developed for the management meetings similar to what the Salt Repository Project Office (SRPO) proposed at their last management meeting. This would allow for continuity and consistency of such interactions. DOE indicated that they would consider the proposal. DOE indicated that it was their position that, depending on the agenda, there is no reason why some management meetings cannot be closed. This should be considered on a case-by-case basis. The NRC concurred that there may be a need at times for limited participation at management meetings.

The NRC stated that technical meeting agendas should focus on identifying and working towards resolution of specific concerns. This may include reaching total resolution, or agreeing to needed follow-up activities that will lead to resolution. Technical meetings should consist of more of a workshop atmosphere with less emphasis on large-scale, broad presentations. Pre-meeting materials should be prepared as far in advance of the meeting as possible to allow all participants a chance to provide input to the agenda topics. The NRC suggested that attempts should be made to make the meeting minutes more understandable, perhaps in a narrative form, clearly indicating agreements, disagreements, and those activities required to reach resolution. The DOE observed that this may not be practical for technical meetings.

Discussions were held concerning involvement by NRC and DOE headquarters management in meeting agreements. The NRC stated that presently the Director of the Division of Waste Management reviews the meeting summary and discusses the meeting with the involved NRC staff immediately following the meeting. The DOE observed that some mechanism should be developed to assure upper management concurrence in meeting agreements since often those people signing the minutes do not have the authority to make commitments.

The NRC also introduced the concept of briefings as another interaction option. Briefings would be used for selected topics requiring an overview of a particular program area. They would consist of a one or two hour presentation to the NRC staff by one or two DOE technical staff. Only questions for clarification would be entertained. These briefings would be open and announced with an agenda provided as for technical meetings. Brief summaries would be prepared consisting of an attendees list, agenda, and copies of viewgraphs and handouts. It is expected that the scope of briefings would be similar to the briefing DOE-HQ gave to the NRC staff on the decision aiding methodology. The DOE concurred that the concept was valid but

questioned whether one or two DOE individuals could provide an adequate technical presentation on such broad topics.

APPENDIX 7 ASSIGNMENTS

In response to the number of Appendix 7 assignments proposed by the NRC during the site specific planning presentation (see Enclosure 4, the DOE responded that they could not support that many interactions due to the disruption it would cause. Additionally, the DOE stated that they had not envisioned Appendix 7 to allow for short term attachments to the NRC On-site Representative's (OR's) office. The DOE believes that activities of this nature would require a revision to Appendix 7. They expressed concern that NRC is circumventing the data review concept which allows states and tribal participation. The DOE further indicated that data reviews may be a better vehicle for accomplishing the types of interactions presently being proposed under Appendix 7 assignments.

TECHNICAL COMMUNICATORS

The DOE provided a revised listing of technical communicators for the project. The NRC indicated that, because of their monitoring role within the organization, technical communicators many times cannot provide immediate answers to NRC technical staff during telephone conversations. The NRC suggested that perhaps secondary contacts consisting of senior technical contractor personnel similar to Nevada's technical communicator network, may expedite the transfer of technical information. The NRC asked for feedback from the DOE as to how their communicators perceive the situation. The DOE responded that they would have to take a hard look at the situation before determining whether a change of this nature is warranted.

AGREEMENTS:

1. DOE will provide NRC organizational relationship charts identifying the QA chain of command for Rockwell and DOE-RL/HQ.

2. DOE will provide NRC an updated list of technical and licensing communicators for Appendix 1 of the Site Specific Agreement.

3. NRC will provide DOE with a list of all NRC BWIP Team members, indicating their relationship to functional and project branches.

4. NRC will provide DOE with its planning document for development of Generic Technical Positions (GTP's) and Site-Speciific Technical Positions (SSTP's) when available.

5. It was agreed that DOE and NRC should hold pre-SCP workshops on performance assessment methodology and geo-hydrology and a briefing on performance allocation.

6. DOE agreed to review the NRC list of concerns and additional proposed interactions (see Enclosure 4) and obtain concurrence of DOE HQ. in any future interactions.

7. DOE will provide NRC with the listing of Site Characterization Analysis comments and issues with resolution status from the BWID tracking system by the end of August 1986.

8. DOE agreed to review the abstract section of the Accessions List and for future listings provide additional information concerning scope and purpose of listed documents per the agreement in the Site Specific Procedural Agreement.

9. NRC agreed to provide DOE a copy of the Audit Report of Site Specific Procedural Agreements when it is finalized in September, 1986.

10. It was agreed that the next management meeting date would be mutually dertermined within two weeks between DOE (Mecca) and NRC (Hildenbrand).

OPEN ITEMS:

1. The definition for "anticipated processes and events," and "unanticipated processes and events" is to be discussed between DOE/HQ and NRC to resolve differences in the interpretations of these terms, for example, where are expected and unexpected human induced events covered when such events are not human intrusion into the repository?

2. The scope, content and timing of site characterization semiannual document requires definition.

3. A consistent program-wide approach to Appendix 7 interactions must be developed by NRC and DOE/HQ.

8/5/86

for John J. Linehan, NRC/WMRP

for O.L. Olson, Director
Division Basalt Waste Isolation

Paul R. Hildebrand, NRC/WMRP
8/5/86

for James Mecca, Chief
Licensing, Environmental and
Safety Branch

Attachment Q

1985

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUN 2 6 1985

Mr. William Purcell, Associate Director
Office of Geologic Repositories
U. S. Department of Energy
Washington, D. C. 20545

Dear Mr. Purcell:

On March 20, 1985, the NRC staff transmitted to DOE its review of the draft environmental assessments (EA's) issued by DOE in support of the site-selection process for the first high level waste geologic repository.

In our comments we identified a number of instances in which DOE did not document all of the pertinent data concerning major siting issues. We recommended that DOE carefully consider and document such information before finalizing the EA's.

Subsequently, we learned of data that we consider may have relevance to estimates of groundwater travel time at Hanford. These data include measurements of long-lived radionuclides, like I-129, in trace concentrations in wells, which may be of use in inferring groundwater behavior in the basalt formations near where the nuclear waste may be emplaced. Attached is a list of two references located by the NRC staff that bear on this subject.

I recommend that, in addressing the NRC comments, DOE pay particular attention to these data. The NRC would be pleased to receive and review any additional pertinent data through our ongoing prelicensing consultation with DOE.

As you are aware, our respective staffs have been meeting to review the development of a DOE document management system which will also serve to support a prompt and efficient licensing process. It may be useful in developing this system to consider the circumstances that led to the absence from the draft EA reference list of the two documents discussed above.

Sincerely,

RE Browning

Robert E. Browning, Director
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosure:
As stated

8508010131
2PP.

REFERENCES

Brauer, F. P. and H. G. Rieck, Jr., 1973. I(129), Co(60) and Ru(106) Measurements on Water Samples from the Hanford Project Environs, Battelle Pacific Northwest Laboratories, Richland, Washington, 36 p.

Brauer, F. P. and K. M. McFadden, 1975. I(129), Co(60) and Ru(106) Measurements on Water Samples from the Hanford Project Environs: 1962-1974, Battelle Pacific Northwest Laboratories, Richland, Washington, 26 p. (plus data appendices of 74 pages).

Attachment R

Rockwell Hanford Operations
P.O. Box 800
Richland, WA 99352

Rockwell International

October 11, 1985

In reply, refer to letter 28313.R1

O. L. Olson, Director
Basalt Waste Isolation Division
Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Olson:

RESPONSE TO INSTRUCTIONS FROM R. E. BROWNING, DIRECTOR, DIVISION OF WASTE MANAGEMENT, NUCLEAR REGULATORY COMMISSION, ON CLARIFICATION OF IODINE-129 ISSUES (Contract DE-AC06-77RL01030)

Rockwell Hanford Operations (Rockwell) was asked to prepare a response to the Browning (1985) letter for incorporation into the environmental assessment (EA) comment response document. That letter referenced two documents that the Nuclear Regulatory Commission (NRC) believes are important to the groundwater travel time issue addressed in the EA. The reports identified were:

Brauer, F. P. and H. G. Rieck, Jr., 1973. "I(129), Co(60), and Ru(106) Measurements on Water Samples from the Hanford Project Environs," Battelle, Pacific Northwest Laboratories, Richland, Washington, 36 p.

Brauer, F. P. and K. M. McFadden, 1975. "I(129), Co(60), and Ru(106) Measurements on Water Samples from the Hanford Project Environs: 1962-1974," Battelle, Pacific Northwest Laboratories, Richland, Washington, 26 p. (plus data appendices of 74 pages).

A Brauer and Rieck (1973) report was issued in 1973 as BNWL-SA-4487. It is assumed that this report is the same Brauer and Rieck (1973) document identified in the Browning (1985) letter (Browning showed the report as having 36 pages while the actual report contains 38 pages). Does Browning have a draft or final copy of BNWL-SA-4487? Brauer and Rieck (1973) basically describes analytical and groundwater sampling techniques. Data discussion is mostly generic and emphasized radionuclide recoveries from different ion-exchange methods. The actual

well and groundwater sample identifications along with analytical results were later detailed in Brauer and McFadden (1975). While the Brauer and Rieck (1973) report can be easily incorporated into the basalt EA, the Brauer and McFadden (1975) cannot without Department of Energy-Richland Operations Office (DOE-RL) clearance. Rockwell recommends that DOE-RL work with Pacific Northwest Laboratory (PNL) and proceed in the release of Brauer and McFadden (1975).

Rockwell also recommends that DOE-RL request PNL to prepare a summary document concerning the current knowledge of iodine-129 distribution in groundwaters on the Hanford Site and in surrounding areas. If DOE-RL accepts this recommendation, then Rockwell will provide a detailed specification to PNL to enable them to provide a document that will support future site characterization planning. In the meantime, Rockwell defense waste management is reviewing their files for any information pertaining to iodine-129 measurements made on groundwaters sampled from basalt aquifers. They will document any such data relevant to waste management activities in accordance with DOE-RL public release policy.

The Browning (1985) letter has been logged into the official EA comment matrix and will be included in the comment response portion of the final EA.

Assuming that the above noted iodine-129 data are publicly released, the following type of writeup is planned for inclusion in the final EA. It could be inserted into Section 3.3.2.

"Iodine-129 and tritium have been detected in confined groundwater zones in the Saddle Mountain basalt beneath the Hanford Site. Two areas have above background concentrations of iodine-129. These are in the vicinity of West Lake and Gable Mountain Pond and at one borehole, DB-7, located approximately 20 kilometers (12 miles) to the southeast near the Yakima River."

"In the West Lake - Gable Mountain Pond area, the basalts were uplifted along the eastern extension of the Umtanum Ridge-Gable Mountain anticline and then eroded by post-glacial flood waters and the ancestral Columbia River (Ledgerwood and Deju, 1976; Graham et al., 1984). Hydraulic intercommunication now exists between the upper confined and unconfined aquifers in this area. Because waste waters from chemical processing plants are discharged into ponds near the 200 East Area on the Hanford Site, hydraulic heads in the unconfined aquifer near these discharge areas have exceeded those in the shallow basalts. This has created a hydraulic driving force for transporting low-level contaminated water from the unconfined aquifer into the uppermost basalt aquifer(s) (Gephart, et al., 1976; Graham et al., 1984). The presence of iodine-129 and tritium in the Saddle Mountains Basalt is thought to result from this exchange. Reported concentrations of iodine-129 in the Rattlesnake Ridge interbed (Figure 3-6) range from near the detection limit of 4×10^{-6} picocuries per liter to a maximum of 4×10^{-2} picocuries per liter near liquid waste disposal sites (Graham et al., 1984; Strait and Moore, 1982; Gephart et al., 1976)."

"At borehole DB-7 near the horn of the Yakima River, iodine-129 in the Mabton interbed was detected at concentrations of approximately 3×10^{-4} picocuries per liter. Data reported by Brauer and McFadden (1975) indicate that this concentration is higher than at other groundwater sampling points away from waste disposal areas. The analytical and groundwater sampling techniques used by Brauer and McFadden (1975) are described in Brauer and Rieck (1973). However, data given in Early et al. (1985), show the absence of tritium (less than 0.1 tritium units) in any wells monitoring the Mabton interbed outside the 200 Areas, including borehole DB-7. This implies that the source of slightly elevated iodine-129 concentrations in borehole DB-7 could not be the result of aquifer transport originating from either precipitation or subsurface movement from radioactive liquid waste disposal sites farther north. The source of iodine-129 in borehole DB-7 is unknown and will be addressed by the Department of Energy (DOE). Studies are underway to examine the structural integrity of borehole DB-7 which may influence the quality of water samples taken."

"Brauer and McFadden (1975) reported iodine-129 concentrations of 6×10^{-5} picocuries per liter in the Columbia River and 2×10^{-2} to 8×10^{-3} picocuries per liter in Hanford 300 Area rain water. Price et al. (1985), reported that iodine-129 concentrations in the Columbia River in 1984 ranged from 1.2×10^{-5} picocuries per liter upstream from Hanford to 7.4×10^{-5} picocuries per liter downstream from Hanford. The DOE concentration guideline for iodine-129 is 60 picocuries per liter. The U.S. Environmental Protection Agency drinking water standard is 1.0 picocurie per liter (EPA 1976)."

Very truly yours,

L. R. Fitch, Acting Director
Basalt Waste Isolation Project

LRL/RMS/abj

cc: J. H. Antonnen - DOE-RL
P. E. Rasmussen - DOE-RL
J. J. Sutey - DOE-RL

REFERENCES CITED IN ENVIRONMENTAL ASSESSMENT

Brauer, F. P. and K. M. McFadden, 1975. "I(129), Co(60), and Ru(106) Measurements on Water Samples from the Hanford Project Environs: 1962-1974," Battelle, Pacific Northwest Laboratories, Richland, Washington, 26 p. (plus data appendix of 74 pages).

Brauer, F. P. and H. G. Rieck, 1973. "129I, 60Co, and 106Ru Measurements on Water Samples from the Hanford Project Environs" BNWL-SA-4478, Battelle, Pacific Northwest Laboratories, Richland, Washington, 38 p.

Early, T. O., R. D. Mudd, G. D. Spice, and D. L. Starr, 1985. "A Hydrochemical Data Base for the Hanford Site," SD-BWI-DP-061, Rockwell Hanford Operations, Richland, Washington.

EPA, 1976. U.S. Environmental Protection Agency. "National Interim Primary Drinking Water Regulations - EPA-570/9-76-003," Office of Water Supply, Washington, D.C., p. 156.

Gephart, R. E., P. A. Eddy, R. C. Arnett, and G. A. Robinson, 1976. "Geohydrologic Study of the West Lake Basin," ARH-CD-775, Atlantic Richfield Hanford Company, Richland, Washington.

Graham, M. J., G. V. Last, and F. R. Fecht, March 1984, "An Assessment of Aquifer Intercommunication in the B Pond - Gable Mountain Pond Area of the Hanford Site," RHO-RE-ST-12P, Rockwell Hanford Operations, Richland, Washington.

Ledgerwood, R. K., and Deju, R. A., 1976, "Hydrology of the Uppermost Confined Aquifers Underlying the Hanford Reservation," ARH-SA-253, Atlantic Richfield Hanford Company, Richland, Washington.

Price, K. R., et al., 1985. "Environmental Monitoring at Hanford for 1984." PNL-5407, Pacific Northwest Laboratory, Richland, Washington.

Strait, S. R., and Moore, P. A., 1982, "Geohydrology of the Rattlesnake Ridge Interbed in the Gable Mountain Pond Area." RHO-ST-38, Rockwell Hanford Operations, Richland, Washington.

Attachment S

Internal Letter

Rockwell International

Date August 21, 1986

No. 65632-86-052

TO: (Name, Organization, Internal Address)
Dr. D. C. Gibbs
Basalt Waste Isolation
Project
PBB/1100

FROM: (Name, Organization, Internal Address, Phone)
T. B. Veneziano
Environmental Control
Program Office
2750E/200 East 373-4216

Subject: Iodine-129 in the Confined and Unconfined Aquifers Beneath the Hanford Site

Ref: (a) Letter 1985, E. B. Ash to O. L. Olson, Department of Energy, "Confined Aquifer Radioisotope Data"

(b) Draft document (unclassified), 1975, F. P. Brauer and K. M. McFadden, I-129, Co-60, and Ru-106 Measurements on Water Samples from the Hanford Project Environs, 1962-1974

(c) RHO-ST-38 (unclassified), 1982, S. R. Strait and B. A. Moore, Geohydrology of the Rattlesnake Ridge Interbed in the Gable Mountain Pond Area

(d) RHO-RE-SR-84-24P (unclassified), 1984, A. G. Law and R. M. Allen, Results of the Separations Area Ground-Water Monitoring Network for 1983

(e) RHO-RE-ST-12P (unclassified), 1984, M. J. Graham, G. V. Last, and K. R. Fecht, An Assessment of Aquifer Intercommunication in the B-Pond Gable Mountain Pond Area of the Hanford Site

(f) RHO-BW-SA-370P (unclassified), 1984, D. L. Graham, R. W. Bryce, and D. J. Halko, A Field Test to Assess the Effects of Drilling Fluids on Groundwater Chemistry Collected from the Columbia River Basalts

It is the purpose of this communication to formally transmit all I-129 data from the Confined Aquifer Sampling Program (CASP) known to the Waste Management Program Office (WMPO). Studies were conducted by CASP under the sponsorship of what is now the WMPO to delineate the distribution of I-129 in the confined aquifers beneath the Hanford Site.

Tables 1 and 2 (attached) are listings of all of the I-129 data for the confined aquifer known to the WMPO, exclusive of any Basalt Waste Isolation Project (BWIP) originated data. Table 1 is a listing of I-129 and H-3 concentrations in water samples collected and analyzed by Pacific Northwest Laboratory (PNL) and is considered of higher quality than data in Table 2. The data in Table 2 were generated from PNL analyses of water samples collected and coded by Rockwell Hanford Operations (Rockwell) personnel under the auspices of CASP. Records that cross-reference sample codes and sample position are poorly documented. Therefore, the reliability of these data is questionable and for this report, considered lower quality than data in Table 1.

I asked Dr. R. C. Routson, Staff Soil Chemist, Environmental Technology Group to interpret the CASP data. His interpretation, which follows, is based on the assumption that all of the data are accurate though some may not be accurate. Dr. Routson has no first-hand knowledge of the data reported because he was not involved in collecting the CASP data. Therefore, his interpretation is based solely on his technical judgement of the data reported.

The possibility of the introduction of contamination into the wells at the time of well drilling and sampling is a risk in obtaining this type of data. Furthermore, the possibility of the introduction of contamination during the analytical phase is also a risk; and almost certainly occurs upon occasion. Elevated values of I-129 should always be viewed with caution due to these potential problems and reliance placed only on a series of at least several samples.

Confined Aquifer

A study to evaluate potential offsite migration of mobile radionuclides from low-level radioactive waste operations was initiated at Hanford Site in the early 1960's. An important radionuclide in this study was I-129 due to its long half-life, low detection limits, and failure to sorb to any appreciable extent in Hanford ground-water systems. These properties result in I-129 being a nearly ideal tracer. One concern which helped foster this study was that intercommunication between the unconfined and confined aquifers could be a pathway to uncontrolled public waters. One aspect of the CASP study was the offsite migration study; another is the limited intercommunication study of the upper confined aquifer (Rattlesnake Ridge) in the vicinity of Gable Mountain Pond and B-Pond (Strait and Moore, 1982).

Figure 1 provides the distribution of I-129 in the Mabton aquifer. The upper value at each location is from data taken in 1973-1974 (Brauer and McFadden, 1975). The bottom number is the average of the 1978-1980 CASP data with the exception of the April 1985 concentration reported for DB-7. This value was obtained by PNL analysis of water samples collected by BWIP personnel. Values above 2 to 4 x 10^{-5} pCi/L can be considered to be elevated in I-129 considering background and measurement errors. Values in wells near Gable Mountain tend to be elevated in I-129. In wells DB-4 and DB-5

the values are near the significant value and can be considered borderline. Around the perimeter of the Hanford Site I-129 concentrations tend to be low. Perimeter wells include DB-1, DB-2, DB-11, DB-12, DB-13, DB-14.

One perimeter well, DB-7, is anomalously high. The DB-7 was resampled and measured in April 1985. The I-129 was approximately half of its previous concentration. Iodine-129 concentrations in all wells are far below the Environmental Protection Agency (EPA) Drinking Water Standard (0.5 pCi/L).

Tritium (H-3) is a second ground-water tracer with all of the attributes of I-129 except for a much shorter half-life. Tritium measurements were made by CASP to confirm the I-129 measurements. Table 3 is a summary of H-3 data reported in Tables 1 and 2. Values of H-3 at about 0.1, International Tritium Unit (ITU), can be considered to be elevated. An ITU equals 3.2 pCi/L. From Table 2, it can be seen that all of the perimeter wells including DB-7 and DB-4 are not elevated; whereas, all the wells near Gable Mountain are elevated, including DB-5. These data suggests that slight cross-contamination from the unconfined to the confined Mabton aquifer has occurred at the wells near Gable Mountain, either due to poor construction of one or more wells, or due to structural deformation or paleoerosion. Aquifer intercommunication is possible in this location due to known structural deformation and erosional unconformities (Graham, et al., 1984).

The absence of H-3 in DB-7 is in stark contrast to the elevated I-129 concentration. Suggested sources of I-129 contamination include intercommunication with the Yakima River, intercommunication near Gable Mountain coupled with transport in the Mabton aquifer to DB-7, and drilling muds and fluids. The absence of H-3 in DB-7 strongly suggests that intercommunication with the Yakima River is improbable. There is sufficient H-3 in the Yakima River (40-50/ITO) for it to be easily detectable in DB-7, if the Yakima River were the source. The concentration of I-129 in DB-7 is as high or higher than in the Yakima River. If the Yakima River were the source, the concentration of I-129 in DB-7 should be lower than that in the river due to dilution.

Transport of I-129 from the Gable Mountain Area in the Mabton aquifer is unlikely due to the absence of H-3 in well DB-7. Because H-3 was not detected in DB-7, transport did not likely occur from the Gable Mountain Area. In addition, wells DB-5 and DB-10 have concentrations of I-129 nearly an order of magnitude lower than at DB-7. If transport from the Gable Mountain Area were the source, concentrations at DB-5 and DB-10 would be expected to be higher than at DB-7, because DB-5 and DB-10 are closer to the source.

Introduction of contamination with drilling residues including muds and organic liquids is a possibility (Graham, et al., 1984). However, some concentrating mechanism for I-129 relative to H-3 is required for this to be a plausible explanation. Iodine is known to sorb on some organics. Well DB-7 was pumped continually for 48 hours prior to the 1985 resampling, which should have removed essentially all easily soluble contamination. The I-129 concentration, however, apparently decreased by only a small amount. If an I-129 solid phase organic sorbent occurred, slow release is possible, and cannot be totally discounted.

A final possibility is that the I-129 is natural radiation. High uranium concentrations in the source rock could result in the release of I-129 to the Mabton aquifer. However, no such uranium concentrations have been identified.

In conclusion, to identify the I-129 source in DB-7 a comprehensive evaluation is required. The long-term pumping of the well, drilling of a new clean well(s), analysis of chemistry of the Mabton aquifer, and other analysis at DB-7 are required. It is unlikely that transport from the Separations Area in any confined or unconfined aquifer is involved.

TABLE 3. Mabton Aquifer Tritium-Concentration Distribution

Well	Concentration (ITU)
DB-1	<0.1
DB-2	<0.1
DB-4	<0.1
DB-5	1.0
DB-7	<0.1

TABLE 3. Mabton Aquifer Tritium-Concentration Distribution (Cont.)

DB-9	0.5
DB-10	0.2
DB-11	<0.1
DB-12	0.1
DB-13	<0.1
DB-14	<0.1
DB-15	-.-
DH-8	95

200 Area Unconfined Aquifer

In addition to the reported confined aquifer data, the Rockwell Waste Management Program is currently conducting a sampling of the unconfined aquifer for I-129. These data may be useful to BWIP and are reported here.

Data from a draft report of a 1973-1974 PNL study which monitored Hanford cribs, are provided in Table 4 (Brauer and McFadden, 1975). The concentration of I-129 in ground-water samples exceeded 10% of Table 2 limits in several wells (Table 2 concentration is 60 pCi/L). Iodine-129 concentrations in 1983 were taken shortly after PUREX startup. These data are limited and no certain trend can be estimated.

TABLE 4. 200 Area Ground-Water I-129 Concentrations

		I-129 (pCi/L)		
Crib	Well	1973-1974 (PNL)	1983	1984
216-A-10	299-E17-1	24		20
216-A-30	299-E25-12	17		
216-A-36B	299-E17-9	35	9.9	19
216-A-37-1	299-E25-20	--	1.5	3.0
216-B-57	299-E33-24	0.23		
216-B-62	299-E28-21	9.9		
216-S-7	299-W22-14	40		

NOTE: Table 2 concentration is 60 pCi/L.

600 Area Unconfined Aquifer

Data for I-129 concentrations in the 600 Area unconfined aquifer are presented in Figure 2. Data are available for two time periods including 1973-1974 [Reference (b)] and 1976-1979 CASP data in Tables 1 and 2. Only wells 28-7, 35-9, and 41-23 were sampled during both time periods. Concentrations remained essentially the same in well 28-7 and increased by factors of two to three in wells 35-9 and 41-23, respectively, from 1973-1983. Maximum values from 7 to 10 kilometers from the Columbia River are about 3 pCi/L. This represents about an order of magnitude decrease in concentration from other maximum 1973-1974 values in the 200 East Area. Dilution, dispersion, and diffusion are the processes that control this decrease. Additional concentration reduction will occur prior to the plume merging with the Columbia River. The I-129 concentration data are in good agreement with the H-3 plume for 1983 (Law and Allen, 1984). This behavior would be expected since both radionuclides come from a common source and are known to be essentially unsorbed in the Hanford ground-water system.

Every effort has been utilized to report the above data as accurately as possible. If you or your staff have questions, feel free to contact me or Dr. Routson (373-2653) for further clarification.

T. B. Veneziano, Program Manager
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TBV/RCR/dyl

Att.

cc: M. R. Adams
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Table 1. Concentration of Iodine-129 in the Mabton Confined Aquifer (Sampled by PNL) and Adjacent Aquifers. (sheet 1 of 4)

Well	CASP No.	Date	I-129 (pCi/L)	Error (%)	H-3 (ITU)[a]	Aquifer
DB5	3	4-14-76	4.3 E-05	3		Mabton
DB5	11	4-14-76	4.2 E-04	3		Mabton
DH8	4	4-30-76	8.1 E-04	2		Mabton
DH8	4	4-30-76	1.1 E-03	2		Mabton
DH8	12	4-30-76	1.2 E-02	4		Mabton
DB1	20	8-9-76	4.1 E-06	7	0.00 ± 0.06	Mabton
DB1	20	8-9-76	8.9 E-06	5		Mabton
DB1	20	8-9-76	1.1 E-05	3		Mabton
DB1	20	8-9-76	1.2 E-05	4		Mabton
DB1	20	8-9-76	9.7 E-03	3		Mabton
DB1	25	8-9-76	4.8 E-06	19	0.50 ± 0.06	Mabton
DB7	22	8-12-76	6.5 E-04	3	0.00 ± 0.06	Mabton
DB7	22	8-12-76	5.7 E-04	10		Mabton
DB7	22	8-12-76	5.2 E-04	29		Mabton
DB7	27	8-12-76	9.6 E-05	3	0.01 ± 0.06	Mabton
DB2	23	8-17-76	3.8 E-06	24		Mabton
DB2	28	8-17-76	1.5 E-05	7	0.00 ± 0.06	Mabton
DB1	30	1-5-77	1.2 E-04	3		Mabton
DB1	35	1-5-77	1.3 E-05	8		Mabton
DB7	31	1-7-77	4.5 E-04	3		Mabton
DB7	36	1-7-77	5.2 E-04	3		Mabton
DB4	32	1-6-77	1.4 E-03	3		Mabton
DB4	37	1-6-77	9.6 E-04	3		Mabton
DB2	33	1-7-77	2.0 E-05			Mabton
DB2	38	1-7-77	2.9 E-05	5		Mabton
DH8	34	1-4-77	3.1 E-02	3		Mabton
DH8	39	1-4-77	3.0 E-02	3		Mabton

[a]ITU = International Tritium Unit = 3.2 pCi/L.

Table 1. Concentration of Iodine-129 in the Mabton Confined Aquifer (Sampled by PNL) and Adjacent Aquifers. (sheet 2 of 4)

Well	CASP No.	Date	I-129 (pCi/L)	Error (%)	H-3 (ITU)[a]	Aquifer
DB1	41	7-20-77	4.8 E-03	3	0.01 ± 0.04	Mabton
DB1	47	7-20-77	5.5 E-04	4		Mabton
DB7	42	7-21-77	1.3 E-05	14	0.15 ± 0.05	Mabton
DB7	48	7-21-77	5.3 E-04	4		Mabton
DB4	44	7-22-77	8.0 E-04	5	0.12 ± 0.04	Mabton
DB4	50	7-22-77	1.1 E-04	14		Mabton
DB2	45	7-20-77	1.5 E-04	10	0.08 ± 0.05	Mabton
DB2	51	7-20-77	6.1 E-04	5		Mabton
DH8	46	7-28-77	3.0 E-02	4	84.7	Mabton
DH8	52	7-28-77	2.9 E-02			Mabton
DB9	54	12-20-77	7.9 E-04	3	0.62 ± 0.06	Mabton
DB9	57	12-20-77	6.9 E-04	4		Mabton
DB10	55	12-28-77	1.3 E-04	3	0.19 ± 0.05	Mabton
DB10	58	12-28-77	3.6 E-04	3		Mabton
DB9	59	4-13-78	7.7 E-04	3		Mabton
DB9	62	4-13-78	1.2 E-03	3		Mabton
DB10	60	4-14-78	4.6 E-05	3		Mabton
DB10	63	4-14-78	4.5 E-05	3		Mabton
DB12	65	5-10-78	1.6 E-05	3	0.12 ± 0.05	Mabton
DB12	66	5-11-78	1.6 E-05	4		Mabton
DB1	73	7-20-78	1.6 E-05	4	0.04 ± 0.05	Mabton
DB1	82	7-20-78	1.6 E-05	5		Mabton
DB2	74	7-25-78	7.7 E-05	6	0.03 ± 0.04	Mabton
DB2	83	7-25-78	3.0 E-06	17		Mabton
DB4	75	7-24-78	6.1 E-05	4	0.05 ± 0.05	Mabton
DB4	84	7-24-78	2.8 E-05	4		Mabton
DB5	76	7-18-78	2.3 E-05	4	1.02 ± 0.10	Mabton

[a]ITU = International Tritium Unit = 3.2 pCi/L.

Table 1. Concentration of Iodine-129 in the Mabton Confined Aquifer (Sampled by PNL) and Adjacent Aquifers. (sheet 3 of 4)

Well	CASP No.	Date	I-129 (pCi/L)	Error (%)	H-3 (ITU)[a]	Aquifer
DB5	85	7-17-78	1.6 E-05	10		Mabton
DB7	77	7-24-78	1.1 E-04	4	0.06 ± 0.05	Mabton
DB7	86	7-24-78	1.4 E-04	6		Mabton
DH8	81	7-18-78	5.3 E-02	3	106 ± 8	Mabton
DH8	90	7-18-78	5.9 E-02	4		Mabton
DH8	90	7-18-78	4.1 E-02	4		Mabton
DB5	113	6-4-79	1.2 E-05	23	1.81 ± 0.08	Mabton
DB5	112	6-4-79	3.0 E-05	43	0.26 ± 0.05	Mabton
DB9	114	6-6-79	1.2 E-03	23	0.61 ± 0.05	Mabton
DB9	115	6-6-79	8.8 E-04	25	0.38 ± 0.06	Mabton
DB4	116	6-7-79	2.6 E-05	16	-0.06 ± 0.05	Mabton
DB4	117	6-7-79	5.3 E-05	16	-0.02 ± 0.05	Mabton
DB14	118	6-11-79	1.3 E-05	30		Mabton
DB14	119	6-11-79	2.4 E-05	23	0.32 ± 0.05	Mabton
DB7	120	6-13-79	2.9 E-04	43		Mabton
DB7	121	6-13-79	4.6 E-04	25	-0.01 ± 0.05	Mabton
DB2	122	6-14-79	1.3 E-05	17		Mabton
DB2	123	6-14-79	2.4 E-05	36	0.07 ± 0.06	Mabton
DB11	53	12-27-77	1.6 E-06	14	0.02 ± 0.04	Priest Rapids
DB11	56	12-27-77	1.4 E-05	5		Priest Rapids
DB11	61	4-13-78	4.9 E-06	12	0.08 ± 0.04	Priest Rapids
DB11	64	4-13-78	3.0 E-06	6		Priest Rapids
DB12	67	5-30-78	1.0 E-05	4	0.11 ± 0.04	Priest Rapids
DB12	68	5-30-78	8.5 E-06	4		Priest Rapids
DB13	69	6-13-78	2.9 E-05	4	0.07 ± 0.05	Elephant Mountain
DB13	70	6-13-78	3.1 E-05	4		Elephant Mountain
DB13	71	6-23-78	5.0 E-06	12		Rattlesnake Ridge

[a]ITU = International Tritium Unit = 3.2 pCi/L.

Table 1. Concentration of Iodine-129 in the Mabton Confined Aquifer (Sampled by PNL) and Adjacent Aquifers. (sheet 4 of 4)

Well	CASP No.	Date	I-129 (pCi/L)	Error (%)	H-3 (ITU)[a]	Aquifer
DB13	72	6-23-78	4.6 E-06	5	0.18 ± 0.10	Rattlesnake Ridge
DB13	91	7-20-78	5.4 E-06	5	0.14 ± 0.05	Selah
DB13	92	8-5-78	3.9 E-06	5	0.02 ± 0.04	Cold Creek
DB14	93	9-10-78	4.4 E-04	5	-0.01 ± 0.04	Rattlesnake Ridge
DB14	94	9-10-78	2.0 E-04	6		Rattlesnake Ridge
DB14	98	10-16-78	1.1 E-05	6		Selah
DB14	99	10-16-78	4.6 E-05	5	0.01 ± 0.05	Selah
DB14	100	10-30-78	5.1 E-06	6		Cold Creek
DB14	101	10-31-78	3.8 E-06	6	0.00 ± 0.04	Cold Creek
53-103	1	4-12-76	6.6 E-06	7	0.00 ± 0.06	Several (flowing)
53-103	1	4-12-76	1.2 E-04	2		Several (flowing)
53-103	9	4-12-76	1.0 E-05	4	0.01 ± 0.6	Several (flowing)
DDH3	21	8-11-76	1.2 E-04	3	53 ± 2	"Deep Confined"
DDH3	43	7-25-77	3.3 E-04	6	23 ± 6	"Deep Confined"
DDH3	49	7-25-77	1.2 E-04	14		"Deep Confined"

[a]ITU = International Tritium Unit = 3.2 pCi/L.

Table 2. Concentration of Iodine-129 in the Mabton and Adjacent Aquifers (Sampled by ARHCO and Rockwell). (sheet 1 of 2)

Well	CASP No.	Date	I-129 (pCi/L)	Error (%)	H-3 (ITU)	Aquifer
DB8	40	2-17-77	1.7 E-02	4		Rattlesnake Ridge
DB13	96	9-28-78	1.1 E-05	7		Mabton
DB13	97B	4-6-79	5.5 E-06	8	0.02 ± 0.06	Mabton
DB14	102	12-28-78	1.6 E-05	17		Mabton
DB14	103	1-4-79	1.1 E-05	13	0.01 ± 0.05	Mabton
DB15	106	4-26-79	2.3 E-02	17		Rattlesnake Ridge
DB15	107	4-26-79	3.1 E-02	20		Rattlesnake Ridge
DB15	108	5-10-79	1.0 E-05	23	0.00 ± 0.05	Selah
DB15	109	5-10-79	8.4 E-06	16		Selah
DB15	110	5-24-79	6.5 E-06	24	0.02 ± 0.05	Cold Creek
DB15	111	5-24-79	6.5 E-06	23		Cold Creek
DB15	124	6-4-79	5.4 E-06	21	-0.03 ± 0.05	U. Umatilla
DB15	126	6-13-79	1.2 E-04	19		L. Umatilla
DB15	127	6-14-79	1.3 E-04	41		L. Umatilla
DB15	128	7-3-79	3.6 E-04	14		Mabton
DB15	129	7-3-79	2.7 E-04	18		Mabton
DB15	130	8-14-79	4.5 E-04	37		Priest Rapids (Interflow Zone)
DB15	132	8-17-79	1.1 E-03	28		Priest Rapids (Interflow)
DB13	136	8-28-79	2.8 E-07	5	0.07 ± 0.05	Mabton
DB13	137	8-28-79	2.4 E-06	20	0.10 ± 0.04	Mabton
DB15	138	9-27-79	1.2 E-03	12		Frenchman Springs No. 2
DB15	139	9-27-79	2.7 E-04	13		Frenchman Springs No. 2
DB15	140	10-4-79	3.1 E-05	20		Frenchman Springs No. 3

Table 2. Concentration of Iodine-129 in the Mabton and Adjacent Aquifers (Sampled by ARHCO and Rockwell). (sheet 2 of 2)

Well	CASP No.	Date	I-129 (pCi/L)	Error (%)	H-3 (ITU)	Aquifer
DB15	141	10-4-79	1.2 E-02	11		Frenchman Springs No. 3
DB15	142	10-15-79	9.8 E-05	12		Frenchman Springs No. 5
DB15	143	10-18-79	7.0 E-05	13		Frenchman Springs No. 4
DB15	144	11-09-79	1.5 E-05	37		Frenchman Springs No. 6
DB13	149	4-18-80	1.9 E-05	17	-0.03 ± 0.05	Mabton

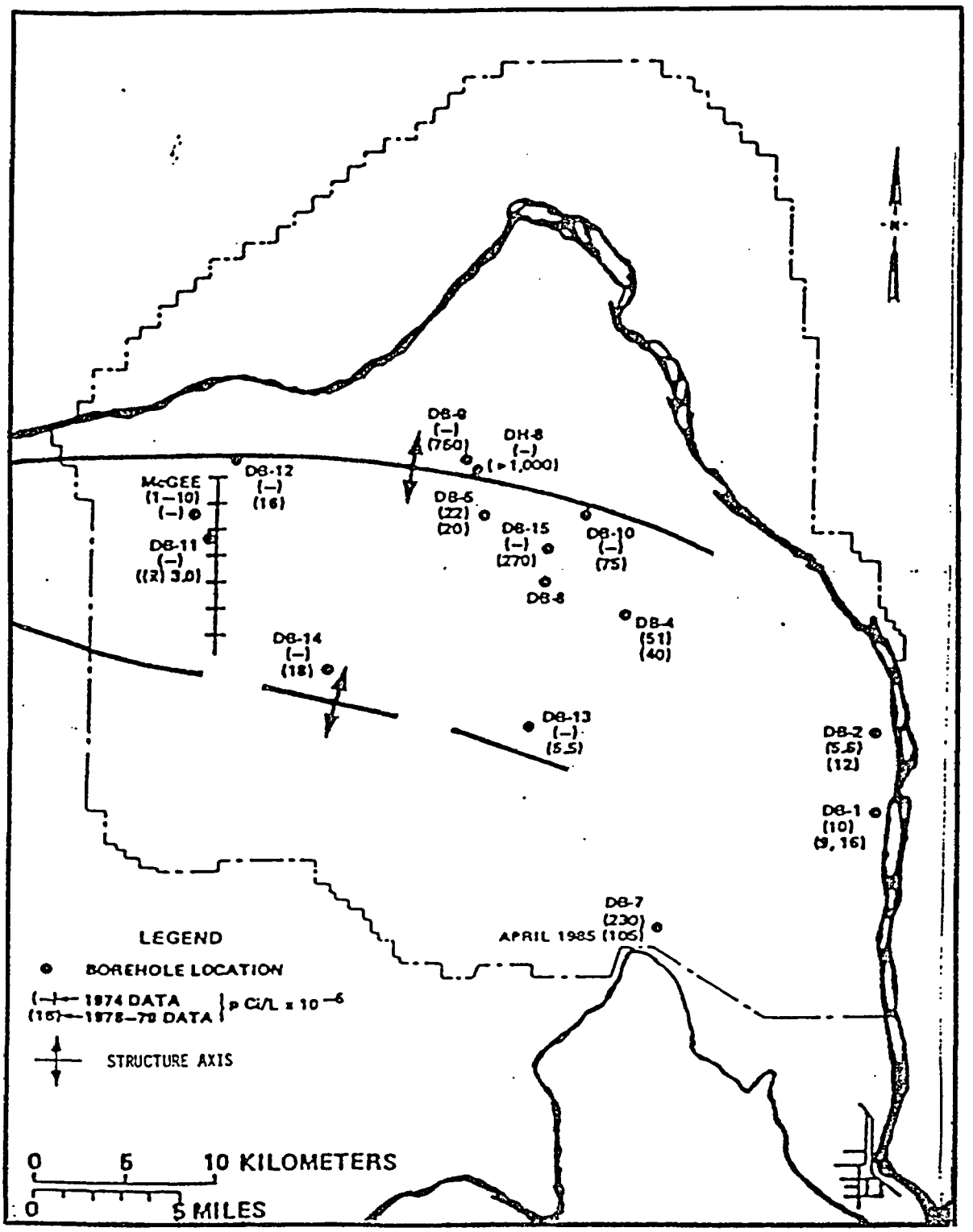

Figure 1: Iodine-129 Data for the Mabton Aquifer.

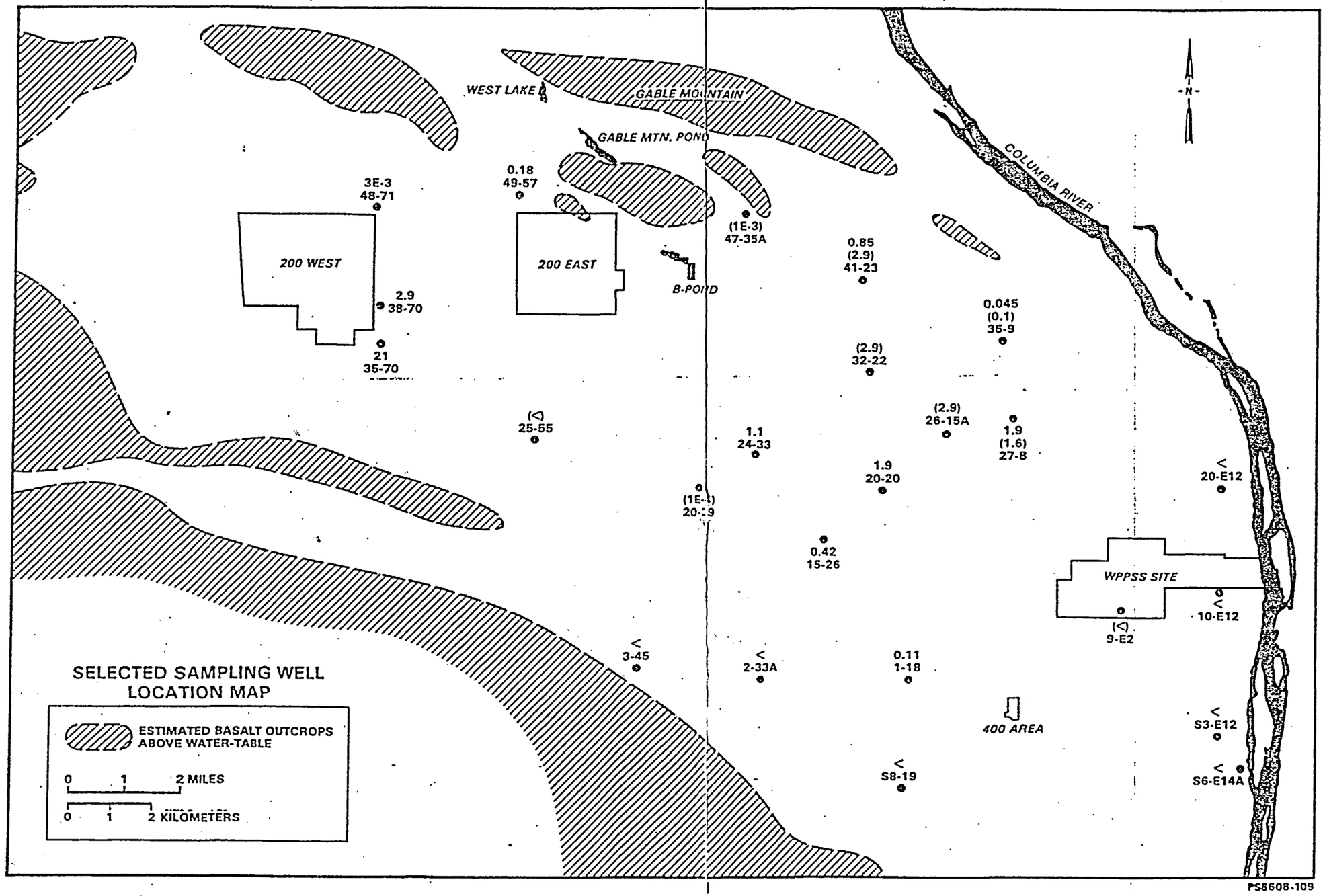

Figure 2. Hanford Site 600 Area Unconfined Aquifer Iodine-129 Concentrations (PCi/L). Values in parentheses are 1983 data. Values without parentheses are 1973-1974 data (Brauer and McFadden 1975). Less than values (<) are concentrations of less than 4×10^{-5} pCi/L.