

See packet 3 for  
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**Department of Energy**  
Salt Repository Project Office  
110 North 25 Mile Avenue  
Hereford, Texas 79045

October 21, 1987

Mr. John J. Linehan  
Section Leader, Salt Section  
Repository Projects Branch  
Division of Waste Management, MS 623-SS  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dear Mr. Linehan:

SUBJECT: MONTHLY REPORT (AUGUST) FROM DON CLARK

Enclosed for your information is the monthly activity report of Mr. Don Clark, who is the Salt Repository Project Representative in the Federal Republic of Germany. He is stationed in Braunschweig at the Company for Radiation and Environmental Research/Institute for Underground Storage (GSF/IfT), which is relatively close to the Asse Mine, the Konrad Mine, and the Gorleben potential repository site. This report covers the month of August 1987.

Please let me know if you have questions about the enclosed material.

Sincerely,

J.O. Neff  
Project Manager  
Salt Repository Project Office

SRPO:KKW:max:1179KW

Enclosure:  
Monthly Report from Don Clark,  
August 1987

- cc: K. Wu, SRPO
- R. Lahoti, SRPO
- S. Heston, SRPO
- G. Appel, SRPO
- D. Smith, TxNWPO
- P. Niedzielski-Eichner, WDIC

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Celebrating the U.S. Constitution Bicentennial — 1787-1987

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SRP REPRESENTATIVE TO THE FEDERAL REPUBLIC  
OF GERMANY (FRG)

Donald E. Clark

Monthly Report for August 1987

Summary

During this reporting period, close contact was maintained with the situation at the Gorleben candidate salt repository. Excavation activities at Gorleben have been halted due to the construction accident that occurred there in May 1987. A summary report on the current status of the Gorleben project was prepared and submitted to the SRP. Also, additional information on the freeze shaft sinking technique used at Gorleben is being gathered. A German shaft-sinking company has been contacted and arrangements have been made to observe the installation of a permanent liner in a shaft similar to the two that are being constructed at Gorleben. Assistance has been given to both U.S. and FRG personnel for the planning of upcoming meetings and visits.

Introduction

Beginning in early 1987, the long-term assignment of a representative of the Salt Repository Project (SRP) to the nuclear waste disposal program in the Federal Republic of Germany (FRG) was established as part of the ongoing interactions between the two countries under the U.S./FRG Bilateral Agreement (Waste Management). Through day-to-day contacts and close association of a technically cognizant SRP representative with key aspects of the FRG program, the objective of having a systematic exchange of pertinent programmatic information and data on the nuclear waste disposal programs of both countries is being realized. During this reporting period, additional valuable contacts with key FRG personnel were established and continued, and direct communication with SRP management was maintained.

PTB and DBE -- Two Key Organizations in FRG Radioactive Waste Disposal Program

Regular contact is being maintained with the Physikalisch Tech-

nische Bundesanstalt (PTB) in Braunschweig and the Deutsche Gesellschaft zum Bau und Betrieb von Endlagern fuer Abfallstoffe (DBE) in Peine. The PTB has responsibility to ensure that federal installations are constructed and operated for the long-term storage and disposal of radioactive waste. In turn, the PTB has contracted with the DBE to design, construct, and operate the federal disposal facilities.

Two candidate repository sites have been selected in the FRG. The Gorleben site, a salt dome, would serve for the disposal of all types of radioactive waste but, most importantly, for vitrified high-level waste (HLW) and spent nuclear fuel. The Konrad site, an abandoned iron ore mine, would serve for the disposal of non-heat-producing wastes. A good summary paper of the German approach is included as Attachment 1 ("The German Approach to the Disposal of Radioactive Wastes" by Ernst Warnecke).

Through regular contacts with the PTB and DBE, current and authoritative information on the FRG disposal program is being obtained and transmitted back to the SRP. This includes photographs and other public information materials, much of which should be very useful to the SRP in providing an overview of the FRG program to interested parties.

#### The Situation at Gorleben

A summary status report on the Gorleben project was prepared and submitted to the SRP (see Attachment 2). At this time, the broad consensus of cognizant FRG experts is that the accident is not related to questions as to the suitability of the Gorleben salt dome for nuclear waste disposal. However, the occurrence of this unexpected event has resulted in much criticism of the FRG waste disposal program on the part of various antinuclear and opposition political groups. As in the U.S.A., various unsubstantiated and erroneous accounts have appeared in the press, and the public information offices have been busy trying to correct all of the misinformation. The overall impact on the German schedule for the exploration and later licensing of the Gorleben site is not yet known, though it now appears that the slippage will extend into the next calendar year.

A copy of schematic drawings of shafts #1 and #1 at Gorleben showing the approximate lithological structures for each is contained in Attachment 3. The principal clay layers for shaft #1 are at depths of about 70 meters, 160-200 meters, and 220-240 meters. For shaft #2, clay layers will be encountered at depths of about 60-110 meters and 170-200 meters.

Attachment 4 is a copy of a photograph taken in the bottom of shaft #1 at Gorleben a week or two prior to the accident. It shows workers at a level about three meters above where the shaft was sunk at the time of the accident. The steel support ring which broke and fell to the bottom of the shaft is the one that is in between the ring marked with an "8" and the one that is darker in color, according to sources in the FRG.

More information concerning the Gorleben accident will be transmitted to the SRP as it becomes available.

#### Freeze Shaft Sinking Construction

The freeze shaft sinking construction technique being used at Gorleben is well established. Published information on this technique is being gathered and transmitted to the SRP. A copy was obtained of a very good German book on this subject, "Handbook of Freeze Shaft Construction in Mining", edited by Dr.-Ing. Joachim Klein. An English translation is being made of two important chapters in this handbook.

Contact was made with a German company which has had extensive experience with the freeze shaft sinking technique. This is the Deilmann-Haniel (D-H) Company with headquarters in Dortmund, FRG. Through a joint venture company, ASG, formed with the Thyssen-Schachtbau Company, D-H is also involved in the shaft construction work at Gorleben. An informative and attractive brochure describing the sinking of the Haltern 1 and 2 shafts was obtained from D-H and is included as Attachment 5.

Arrangements have been made to visit a D-H shaft sinking project in the FRG and to observe installation of the final liner in the frozen portion of the shaft. There is only a narrow window of time during which the visit can be made and this will occur in early September.

#### Assistance for Planning of Upcoming Meetings and Visits

Assistance is routinely provided to both U.S. and FRG personnel for the planning of upcoming meetings and visits, as appropriate. A U.S./FRG workshop on geochemistry is scheduled to be held in

Albuquerque, New Mexico in September 1987. Several German representatives will attend this workshop and assistance was provided to them and U.S. counterparts in planning for this meeting and the making of other arrangements. Similarly, assistance was given for planning of visits to the FRG by U.S. representatives. A local meeting on geochemistry is planned in Braunschweig in early September in connection with an international conference on actinide chemistry and migration behavior which is scheduled to be held in mid-September in Munich.

A visit by U.S. nationals under sponsorship of the National Conference of State Legislators (NCSL) is planned for October 1-2, 1987. This is part of an orientation tour of several European radioactive waste management sites and will include visits to the Konrad and Asse mines, as well as discussions with licensing authority representatives of the State of Lower Saxony. Most of the group of 25-30 persons are legislators and staff from the states currently being considered by DOE as potential hosts for the first HLW repository or the Monitored Retreivable Storage (MRS) facility, i.e., from Texas, Nevada, Washington, and Tennessee. A considerable effort will be required to coordinate this visit with the Germans and to make it a success for all concerned.

#### Planned Activities for September 1987

A visit will be made to the D-H Company and installation of the final liner will be observed in a frozen shaft. Locally, a meeting on geochemistry with Dr. Paul Cloke of ONWI will be held in Braunschweig. Participation is planned at the international conference to be held in Munich on September 14-18. The title of this conference is "Chemistry and Migration Behavior of Actinides and Fission Products in the Geosphere". Further plans will be made to accomodate visits by U.S. and FRG representatives, as appropriate, and to participate in the NCSL tour of European waste management sites. And, close contact will be maintained with PTB and DBE, particularly with respect to any developments concerning Gorleben.

#### Attachments

1. Paper by Ernst Warnecke, "The German Approach to the Disposal of Radioactive Wastes"

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2. Summary report by D. E. Clark on current status of the Gorleben project
3. Schematic drawings of Gorleben shafts #1 and #2
4. Photograph of workers in bottom of Gorleben shaft #1
5. D-H brochure describing the sinking of Haltern 1 and 2 shafts

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attachments (5)