



tained. The procedure authorizing work by letter was also continued for work falling under the April 30 Order, including excavations.

The use of letters was superseded on June 29, 1982, by a work permit system. The work permit system applied to all work covered by the April 30 Order. This system also made use of forms requiring sign-off by the Company, indicating that NRC approval had been obtained. After institution of the work authorization procedure, both an excavation permit and a work permit had to be secured before excavation work could proceed.

Between April 30 and early June, I took a number of specific excavation requests to Dr. Landsman for approval prior to Company sign-off of an excavation permit of work release. Included among them were excavations for a freeze-hole extending 54 feet below grade, excavation of a 72-inch diameter pond fill repair, slope layback and auxiliary building deepseated benchmarks. In the early part of June, I discussed with Dr. Landsman the excavation permit system and the manner in which the Staff was approving work under the Order. With the creation of an excavation permit process, we anticipated that the NRC Staff could eventually find sufficient controls were in place to justify a broad work release for routine excavations at the site. We believed

that such a work authorization was within the NRC Staff's powers under the April 30 Order.

On June 11, 1982, Dr. Landsman and I discussed the excavation permit procedure. Dr. Landsman, at that time, stated that he found the excavation permit procedure sufficient. He indicated that Region III did not find it necessary to specifically review and approve all minor excavations before work started, but that he would want to review the paperwork on all excavations permitted between his site visits. He also stated that the excavation permit procedure should be adhered to. Based on this discussion, I concluded that Dr. Landsman had given approval to go ahead with minor excavations, under the excavation permit procedures, and subject only to Staff review after-the-fact. We further understood that Dr. Landsman wanted to review major excavations, such as the excavation for the service water underpinning, before the work started.

The fireline excavation was carried out to relocate a fire protection line to an area where it would not be damaged by planned excavations to replace and rebed service water piping. The old fireline, located near the circulatory water structure, was abandoned in place and a new line was installed at a nearby location. The fireline was not a category I pipe.

The excavation below the deep-Q duct bank involved a crossing of the freezwall and an underground electrical duct bank, often referred to as the "deep-Q duct bank." To protect the duct bank, it was necessary to discontinue the freezwall where it crossed the duct bank. To prevent water from passing through this gap in the freezwall, a plug had to be installed below the duct bank. The excavation down to the duct bank was 32 feet deep. An additional excavation below the duct bank was necessary to install the plug.

While I do not recall specific discussions concerning the permits in operation here, our general practice was to hold internal discussions before sign-off on an excavation permit or work permit for the purpose of verifying that the work in question was authorized by the NRC. Both the fire-line excavation and the excavation below the deep-Q duct bank occurred after my June 11 discussion with Dr. Landsman. Both were minor excavations, which therefore did not require explicit NRC review and approval prior to commencement of the work, but which would be subject to NRC review at a later date. Accordingly, the Company signed off on the excavation permits and work permits for these two excavations in late July, 1982.

At the time the Company signed off on these activities, I was unaware of Dr. Landsman's concern and desire that

these two activities not be treated as minor excavations but that explicit review and approval be obtained for them. Had I known of his concerns, I would not have allowed the sign-offs to occur and the excavations to proceed without his prior review and approval.

Since becoming aware of Dr. Landsman's concern about these excavations, I have learned that a Bechtel Remedial Soils Group Supervisor had personal meeting notes from a May 21, 1982, exit meeting with Dr. Landsman that suggest that Dr. Landsman had requested that further approvals be obtained before excavating under the deep-Q duct bank. I attended that meeting, but do not recall Dr. Landsman expressing such a concern. I was also unaware of the Bechtel Supervisor's notes until after this matter became an issue. The Bechtel Supervisor was not an individual responsible for determining if NRC authorization had been obtained.

Once I became aware that Dr. Landsman was concerned about the excavations proceeding without prior NRC approval, I had the approvals for the work permits withdrawn.

Q2. Mr. Mooney, do you have anything to add to Mr. Wheeler's testimony on this subject?

A2. Mr. Wheeler was operating on the theory that Region III, through Dr. Landsman, was the final approval point within the NRC Staff for this work. The Memorandum and Order memorializing a conference call on May 5, 1982, explicitly stated that either NRR or Region III could approve the work.

Quite frankly, it was not eminently clear which Branch of the Staff was exercising approval authority. Certainly, I believe that Mr. Wheeler's practice of seeking approval through Dr. Landsman was permissible and prudent since Dr. Landsman was the NRC inspector closest to the work.

Q3. Could you describe your recollection of the meetings referred to in Dr. Landsman's memo?

A3. With regard to the May 20, 1982 meeting referred to in Dr. Landsman's memo of August 24, 1982, I apparently had a different understanding of the nature of NRR's technical problems than did Dr. Landsman.

Q4. Could you explain?

A4. Yes. The so-called deep-Q electrical duct bank is a safety-related electrical duct bank located quite deep in the ground. The technical questions discussed at the May 20 meeting concerned the manner in which this duct bank would be protected from damage at the location where it crossed the freezwall and the requirements for backfilling the monitoring pits. I understand that the freezwall has been previously described to the Board, so I will not repeat a description here. It suffices to say that without protection, the freezwall could damage the duct bank by causing the soil beneath the duct bank to heave.

Initially, the Company intended to insert the freeze elements in a manner which would have frozen the soil directly beneath the duct bank. The Company proposed to protect the duct bank from any heaving which would have been caused by the freezwall by excavating the soil directly beneath the duct bank. However, the Company abandoned this plan when it discovered that the duct bank was deeper than previously expected. The depth of the duct bank precluded the insertion of freeze elements at locations which would have insured the freezing of the soil beneath the duct bank. At the May 20 meeting, the Company advised the Staff that the duct bank was deeper than expected and proposed an alternative plan, involving excavating the soils

below the duct bank and installing a plug, either of clay or concrete, which would serve in place of the freezwall at that location.

At the May 20 meeting, the NRR representatives expressed concern with the manner in which the Company would permanently backfill the excavation around the duct bank, as well as excavations made to monitor the heaving of soil at other locations. NRR was concerned that concrete would be harder than the surrounding soil and therefore might cause differential settlement if left there permanently. Discussions relating to this permanent backfill question were not completed at this meeting, but to my knowledge, no one from the Company understood NRR's concern as relating to the excavation, as opposed to the permanent backfill. This point is highly relevant, since the Company would not have permitted this excavation to proceed if we believed NRR had technical problems with it.

After this issue was raised in Dr. Landsman's memo, I was advised that Mr. John Fischer, a Bechtel employee, had personal notes of the May 20, 1982, meeting indicating that the Company would not proceed with excavating the pit below the duct bank "until NRC approval." I do not remember such a commitment being made at the meeting, nor do I recall anyone from the Staff requesting such a commitment. However, I do not dispute that the statement apparently was made at the meeting.

When I left the May 20 meeting, I understood the need for further contact from NRR on the backfill, but felt that the



Company and NRR were in agreement on the excavation itself. However, quite apart from my understanding of the meeting, NRR gave explicit approval for the excavation in a letter dated May 25, 1982, four days after the meeting. The May 25 letter states that excavations directly beneath the deep-Q duct bank had been approved. The letter also makes a clear distinction between excavating and backfilling, which at the time served to confirm my understanding of NRR's concerns.

I had further discussions with representatives of NRR on this matter at a soils audit held July 27-30, 1982, at Bechtel's Ann Arbor office. As my notes and the NRC meeting summary, dated November 12, 1982, indicate, discussion at this audit once again focused on the backfill and did not relate to the excavation itself. At the audit, NRR again advised the Company that a report was necessary prior to permanently backfilling any of the excavation pits. No such condition was placed on excavating soil.

Q5. Mr. Mooney, do you have anything to add on the fireline relocation question?

A5. Mr. Wheeler explains his basis for believing this work had been approved. The fireline relocation job, while clearly falling within the scope of the April 30 Order, was only ancillary to the soils remedial work. That is not to

say that proper controls could be ignored or that NRC approval was unnecessary. Because the fireline relocation was essentially an ancillary task, I do not believe the Company had discussions with NRR concerning it.

Q6. Mr. Mooney, could you please describe your views of the so-called "cable-pulling incident" of March, 1982.

A6. Because I was personally involved in these discussions, I wish to explain my view of the "cable-pulling" incident referenced in the Attachments to Mr. Keepler's testimony. This incident has been the subject of a formal NRC investigation as to whether material false statements were made. I believe that the incident arose because of ineffective communication between the Company and the NRC Staff.

The Company proposed a quality assurance plan for the auxiliary building underpinning work to the NRC in a letter dated January 7, 1982, and at a meeting with Region III on January 12, 1982. Over the next two months, discussions between the Company and the Staff continued regarding which underpinning activities were to be Q-listed.

On March 10, 1982, there was a meeting between the Company and NRR and Region III. At this meeting, the

Company sought to define those underpinning activities which were considered safety-related and subject to the quality assurance program and therefore needed to be Q-listed. However, the NRC Staff did not accept the classifications proposed by the Company and took the position that all soils activities beginning with Phase 2 work should be Q-listed except for specific items for which it could be shown, in a fashion acceptable to the NRC, that there was a specific basis to justify non-Q treatment.

One area of misunderstanding between the NRC Staff and the Company was the question of whether the Company agreed to the Staff's position at the March 10 meeting. Apparently some NRC Staff members believed that the Company had committed at that meeting that all to-go underpinning work would be Q-listed unless specifically excepted. I and other Company employees believe no such commitment was made. I viewed this meeting as a chance to discuss the issue with the NRC Staff and not as one at which a commitment would be made. I can recall indicating to the NRC Staff that we understood the Staff's request for such a commitment and that we would "get back to them on it." The NRC Staff's meeting minutes do not indicate any such commitment, corroborating my recollection that no commitment was made.

A second area of misunderstanding arose because of the failure to define instrumentation installation as either a part of Phase 1 or Phase 2 of the underpinning work. The NRC Staff's position at the March 10 meeting was that they wanted all underpinning activities beginning with Phase 2 to be Q-listed unless specifically excepted. Since instrumentation had to be installed and functioning before the start of Phase 2 work, the Company believed that the NRC Staff did not require that the installation of underpinning instrumentation be covered by the quality assurance program. The Company had stated that calibration of instruments and checkout of the system would be Q-listed.

A third area of confusion related to the completion status of underpinning instrumentation on March 10 and 12, 1982. At the March 10 meeting, Region III inspectors formed the impression that underpinning instrumentation had been completed. The NRC investigation conducted to review this matter determined that statements made by the Company at the May 10 meeting were understood by several NRC personnel to mean "work had begun without giving a report on the status of completion."

On March 12, 1982, I and others from the Company initiated a telephone call to Region III Staff. During this call, the Company identified a list of items which we

believed could justifiably be treated non-Q. The Region III inspectors were provided a matrix which showed that instrumentation installation was one of the items that was to be non-Q. With no intent to mislead the NRC Staff, but meaning only to inform the Region III inspectors that underpinning instrumentation work had begun, Alan Boos of Bechtel stated, "Our instrumentation is essentially well underway. Wiring has been pulled -- raceway has been installed." The Region III inspectors apparently understood these statements to mean that all wiring for the underpinning instrumentation had been completed, an unintended inference.

The misunderstandings and poor communications of March 10 and 12, 1982 came to light during the March 17-19, 1982 Region III safety inspection. The NRC inspectors discovered that instrumentation installation was in progress, not completed. They then informed the Company that this activity was to be Q. In response, the Company suspended all underpinning instrumentation installation and reclassified the activities as Q.

Subsequent to these events, Mr. Cook had a number of discussions with the NRC Staff Management leading up to a March 30, 1982 meeting with Region III and NRR, at which time the Company committed to Q-listing essentially all of the to-go underpinning work. As a result of the March 30

commitment by Company Management, instrumentation installed and cables pulled without being covered by quality assurance requirements were upgraded to comply with all quality assurance requirements. Since March 30, 1982, all underpinning instrumentation has been installed pursuant to quality program requirements.