

DISTRIBUTION:

MAR 25 1975

Docket Nos. 50-438  
and 50-439

- NRC PDR
- L PDR
- Docket Files (2)
- LWR 2-3 Rdg
- LWR ADs
- FSchroeder
- AKenneke
- LWR TCs
- ELD
- IE (3)
- DDavis
- EGoulbourne
- LShao
- WGammill
- LWR BCs
- ACRS (16)

Tennessee Valley Authority  
 ATTN: Mr. James E. Watson  
 Manager of Power  
 818 Power Building  
 Chattanooga, Tennessee 37401

Gentlemen:

During several recent inspections (January 29-31, 1975 and March 5, 1975) of your Bellefonte site, we noticed that excavation blasting had caused large limestone layers to slide over what appears to be a clay lubricated seam. Section 2.5 of your PSAR indicated some clay seams but in our review and evaluation, we had not expected clay seams to occur at elevations as high as have been observed. This situation has given rise to some concerns related to your rock anchor design for the containment vessels. To enable us to resolve these concerns, we are enclosing a request for additional information. We need your response to these requests by April 4, 1975. If you can not respond within this time, please notify us within seven (7) days as to the date you will be able to furnish the requested information.

Sincerely,  
 Original Signed By:  
 R. Ferguson

*apkl.*  
3

A. Schwencer, Chief  
 Light Water Reactors Branch 2-3  
 Division of Reactor Licensing

Enclosure:  
 Request for Additional Information

ccs: Mr. R. H. Marquis  
 General Counsel  
 629 New Sprakle Building  
 Knoxville, Tennessee 37902

Mr. T. Spink  
 Licensing Engineer  
 Tennessee Valley Authority  
 303 Power Building  
 Chattanooga, Tennessee 37401

bccs: E. G. Beasley, Jr.  
 307 U.B.A.

Tennessee Valley Authority

Knoxville, Tennessee 37902

J. R. Buchanan, ORNL

T. B. Abernathy, DTIE

37902 x 7886 LWR 2-3

DDavis:rm

3/21/75

C-SE-DTR

LShao

3/21/75

SA-DTR

WGammill

3/24/75

C-LWR 2-3:RL

ASchwencer

3/25/75

LB

TENNESSEE VALLEY AUTHORITY  
BELLEFONTE NUCLEAR PLANT, UNITS 1 AND 2  
REQUESTS FOR ADDITIONAL INFORMATION  
DOCKET NOS. 50-438 AND 50-439

1. Provide figures which show the location (in plan and elevation) of fill concrete and rock for Unit 1 foundation with respect to the containment internal arrangement including the rock anchor tendons. Identify the location of all clay seams (the origin of possible displacements) which are beneath Unit 1 containment and would be intersected by the rock anchor tendons.
2. Discuss the effects that blasting created vertical seams in the limestone might have on the rock anchors.
3. Discuss the effects that vertical forces (e.g., LOCA pressure loads) might have on differential liner motion at the intersection of the containment wall and floor due to 1) squeezing of clay seams and 2) the heterogeneous foundation of fill concrete and rock.
4. Discuss the effects that horizontal forces (e.g., SSE loads) might have on buckling or thrusting of the limestone layers due to sliding across the clay seam.
5. Discuss the effect that containment heat load due to plant operation over a 40-year period might have on the clay seams in the foundation and any subsequent impact on the grouted rock anchors (e.g., cracking the grout).
6. Discuss the effect that swelling of the clay seam due to the construction excavation might have on cracking of the rock anchor grouting.
7. Discuss the effects that a reduction in the rock modulus of elasticity due to blast induced fissures will have on both the rock anchors and differential liner motion (see No. 3 above also).
8. Discuss the precautions that are being taken to assure complete grouting of the blast induced fissures. The specific concerns are the effects of any ungrouted areas, assurance that sufficient grout is placed and assurance that the fissure is not significantly larger than expected.