



LER #: 50-321/1981-031  
Licensee: Georgia Power Company  
Facility Name: Edwin I. Hatch  
Docket #: 50-321

Narrative Report  
for LER 50-321/1981-031

On 4-15-81, with Unit 1 in the refueling mode and Unit 2 in normal steady state operation at 740 MWe, the plant was notified by SCSi that wall C130-39 in the Plant Hatch Control Building requires a minor modification to lower the calculated stresses at one localized section of the wall to within design allowables during a postulated DBE and/or OBE. SCSi had performed a reanalysis of wall C130-39 in response to a Bechtel letter indicating that additional evaluation should be performed on certain concrete masonry walls which were analyzed in the 180-day response to IEB 80-11. This is a repetitive occurrence - see LER 50-321/1980-115. There were no effects on public health or safety due to this event.

The acceptance criteria for design allowable stresses during a postulated earthquake used in the 180-day response to IEB 80-11 are more conservative than the design criteria utilized in the original design of concrete masonry walls. The new acceptance criteria caused wall C130-39 to have a calculated stress which slightly exceeded design allowables. Wall C130-39 will be modified to relieve the overstress condition when materials are available.

The concrete masonry walls at Plant Hatch are reinforced vertically and horizontally. Horizontal extra-heavy Durowall reinforcing is provided in the mortar joint at every block course. Vertical reinforcing is provided at 1'4" or 2'3" centers (maximum spacing) for solidly filled and partially filled walls, respectively. The walls are tied mechanically to the supporting columns or walls, and to the floor supporting the walls by dovetail stone anchors, expansion anchors, and reinforcing dowels.

The reinforcing will serve to distribute wall loads and "hold" the wall together in the event an earthquake should occur. This would tend to ensure that blocks will not be indiscriminately tossed about, even though local cracking might occur.

The floor response spectrum for the floor located above the wall was used in the analysis as a conservatism.

Although wall C130-39 in the Plant Hatch Control Building shows local stress above the code allowables during an OBE and/or DBE, it is unlikely that the wall will totally collapse and render safety related equipment or systems inoperable. The following considerations were used to substantiate this conclusion:

1. The overstress condition identified is a localized condition only.
2. The overstress condition is based on code allowables not material yield stresses or ultimate stresses.
3. As local yielding takes place the wall will lose some of its ability to carry load at the point of local yielding, and the stresses will be distributed to adjacent elements via the reinforcing and masonry thus spreading out the loads.
4. If local cracking develops in the masonry during an earthquake the wall loses its ability to transmit stresses across the discontinuity at the crack; therefore, damping is increased and earthquake forces are not as readily transmitted throughout the wall.
5. Maximum wall displacements identified from our seismic analyses are less than .02" for the wall. This small displacement should not degrade the integrity of safety related equipment in the event of an earthquake.

Local points of attachment to the wall were checked to verify that no local failures would occur during an earthquake. 4 modes of failure at local attachments were investigated, and no overstresses were identified when compared with code allowables.