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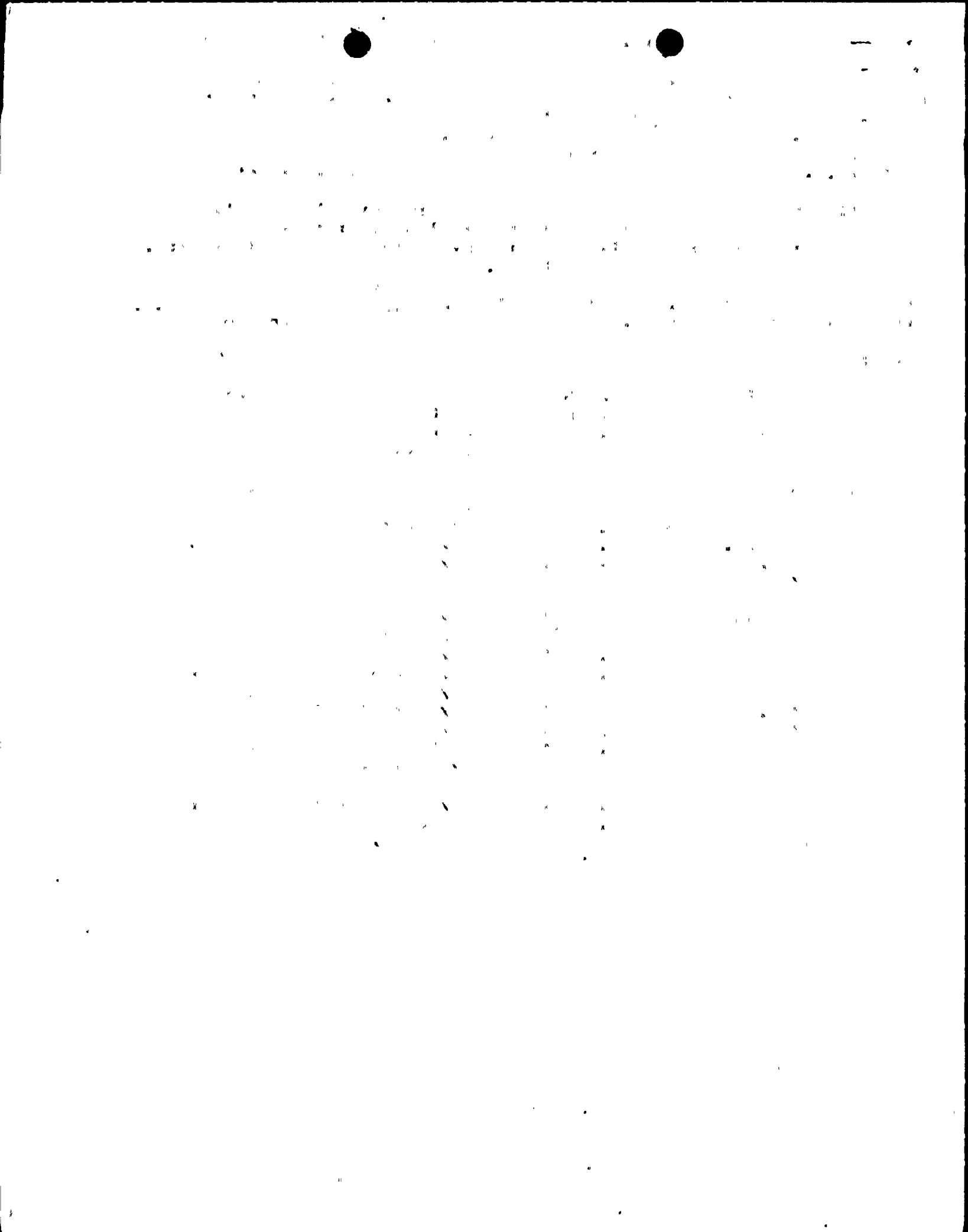
SUBJECT: Forwards revised Page 21 to 840906 functional capability
 rept re functional capability of Class 1 piping, per request.
 Thick pipe in auxiliary piping sys within acceptable limits.
 SER Open Item 3 can be closed.

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APR-22-1985

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
UNIT NO. 1 - DOCKET NO. 50-400
FUNCTIONAL CAPABILITY OF CLASS 1 PIPING

Dear Mr. Denton:

Carolina Power & Light Company (CP&L) hereby submits additional information concerning the Functional Capability of Class 1 Piping at the Shearon Harris Nuclear Power Plant. As discussed in a telephone conversation with the NRC Mechanical Engineering Branch reviewer, enclosed is a revised page 21 to the SHNPP Functional Capability Report previously submitted by letter dated September 6, 1984. This revised page indicates that for the specific case of relatively thick piping found in the Class 1 Auxiliary Piping System at SHNPP that the ASME Section III, 1977 Edition with Addenda up to and including Summer 1979, Level D limits do, in fact, represent acceptable functional capability limits.

It is our understanding that with the submittal of the above clarification that the Safety Evaluation Report (SER) Open Item No. 3 concerning Functional Capability of Class 1 piping can now be closed in a future SER Supplement. If you have any questions concerning this submittal, please contact me.

Yours very truly,

S. R. Zimmerman
Manager

Nuclear Licensing Section

JHE/crs (1320GAS)

Enclosure

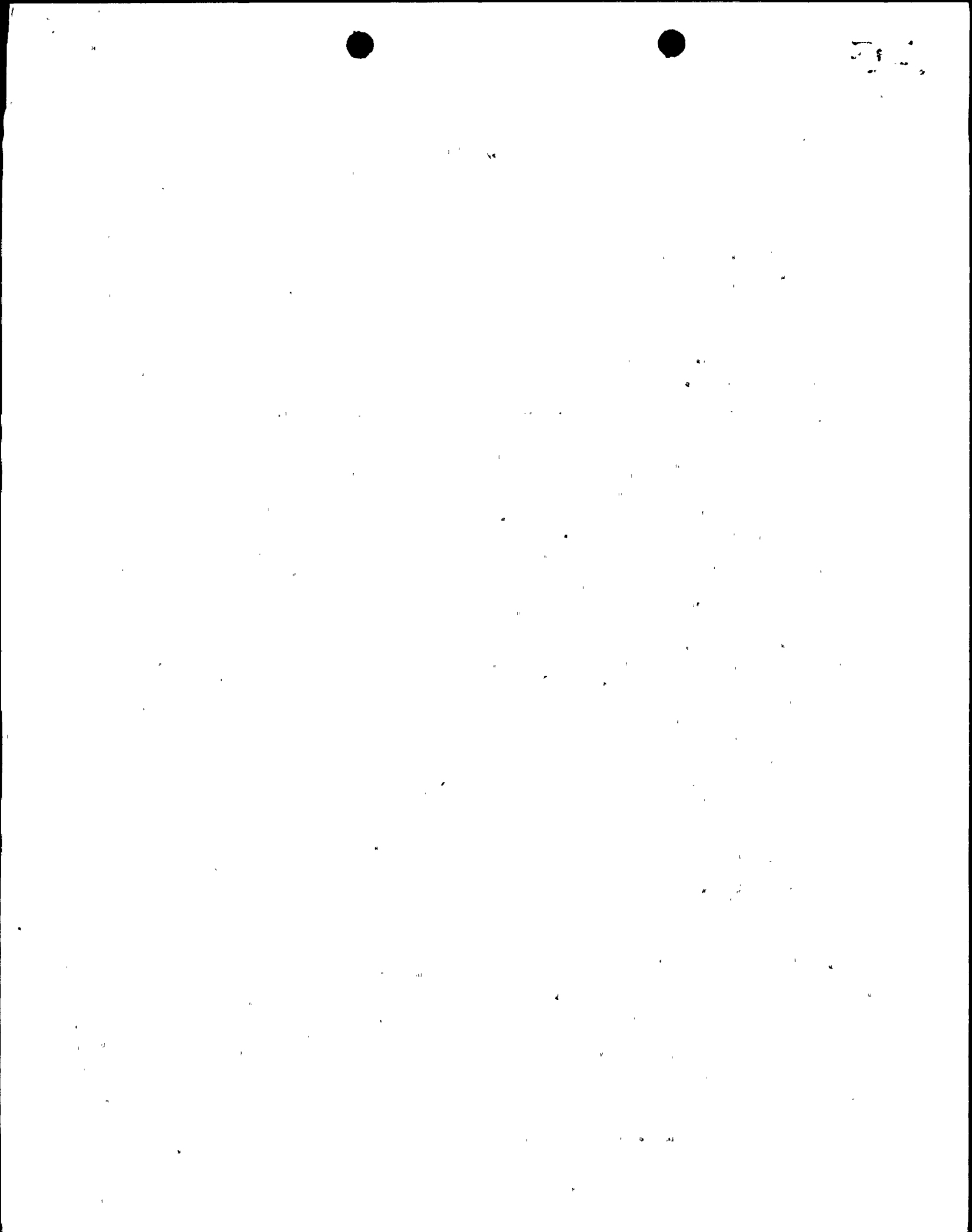
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CAROLINA POWER AND LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT
FUNCTIONAL CAPABILITY OF ASME CLASS 1
AUXILIARY PIPING SYSTEMS

9.0 CONCLUSIONS

It has been demonstrated by finite element elastic-plastic analysis on elbows that meaningful functional capability limits can be derived based on the ultimate moments as defined by Gerber modified by the B_2 stress index for the piping component. Small deformations are assured if stresses less than 70% of the modified limit are maintained in the piping system. This criterion should be valid for any pipe size.

For the specific cases of relatively thick piping found in the Class 1 portions of pressurized water reactors and for Shearon Harris Nuclear Power Plant in particular, it is demonstrated that the small deformation limit defined above is bounded by a stress of $3.0S_m$ calculated by an elastic analysis. Therefore, for these specific cases, the ASME III, 1977 Edition with Addenda up to and including Summer 1979, Level D limits do in fact represent acceptable functional capability limits.

