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DENTON, H. R. Office of Nuclear Reactor Regulation, Director (post 851125

SUBJECT: Forwards justification of containment isolation HI-1 setpoint pressure, resolving Confirmatory Item 13 & Issue 16 of SER (NUREG-1038) & NUREG-0737, TMI Item II.E.4.2.

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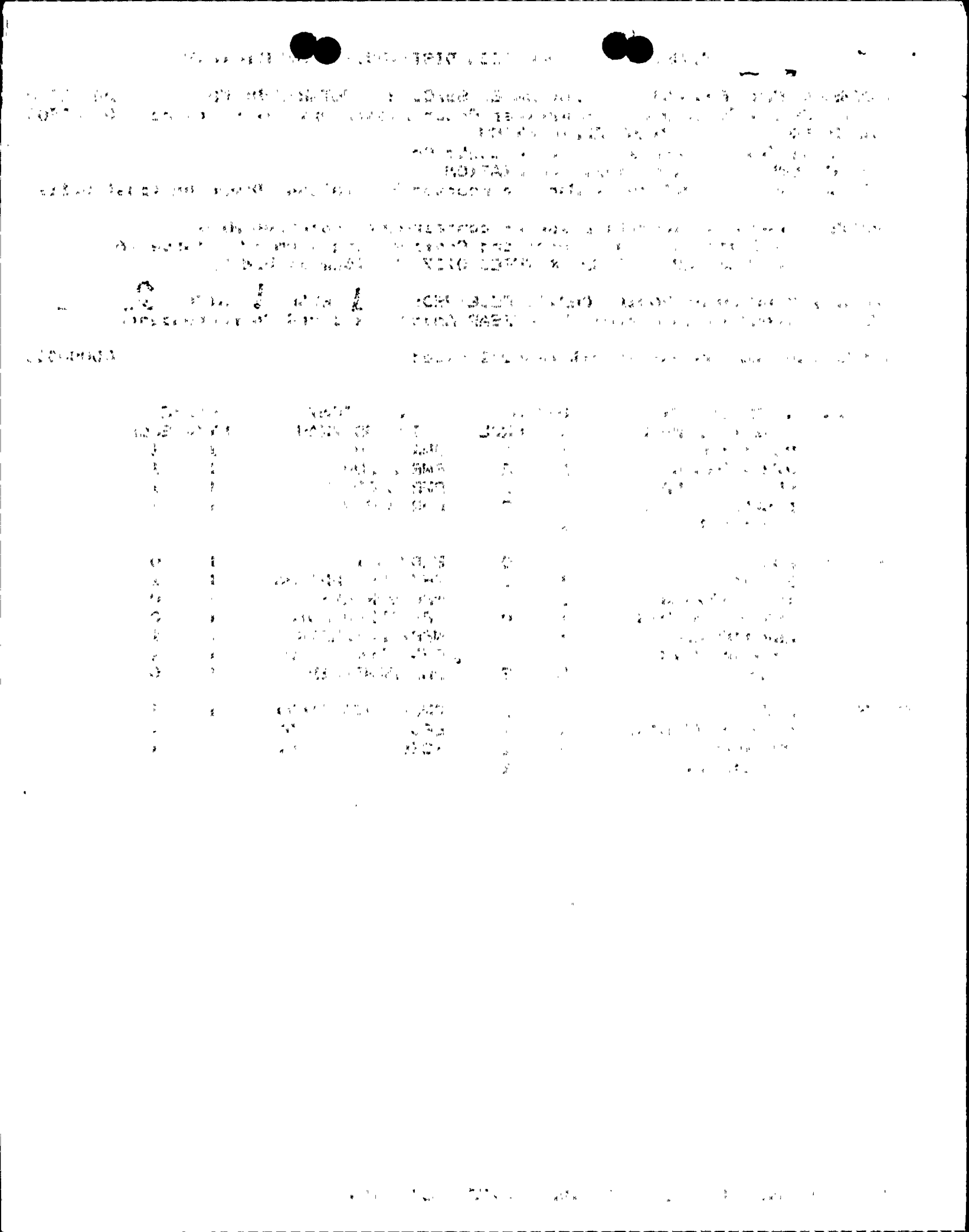

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Carolina Power & Light Company

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SERIAL: NLS-86-193

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
CONTAINMENT ISOLATION HI-1 SETPOINT PRESSURE

Dear Mr. Denton:

Carolina Power & Light Company provides justification of the containment isolation HI-1 setpoint pressure. The attached information resolves Confirmatory Item 13 and Issue Number 16 of Table 16.1 of the Shearon Harris Nuclear Power Plant SER (NUREG-1038). Also, the attached information resolves TMI Item II.E.4.2 of NUREG-0737.

If you have any questions, please contact Mr. Gregg A. Sinders at (919) 836-8168.

Yours very truly,

S. R. Zimmerman
Manager
Nuclear Licensing Section

GAS/pgp (3939GAS)

Attachment

cc: Mr. B. C. Buckley (NRC)
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Dr. J. Nelson Grace (NRC-RII)
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SHNPP SER Confirmatory Item 13 and Issue Number 16,
of SER Table 16.1, Containment Isolation Setpoint Pressure

The applicant has not adequately demonstrated that the containment setpoint pressure that initiates containment isolation has been reduced to the minimum compatible with normal operating conditions as detailed in NUREG-0737, Item II.E.4.2, Position 5.

Position

The Shearon Harris Nuclear Power Plant (SHNPP) normal containment purge system is a non-safety system designed to maintain the containment at a nominal setpoint of negative 0.25 inches of water gauge (-.01 psi). However, when this system is inoperable, the associated containment isolation valves automatically shut. (This also prevents back flow through the purge make-up lines).

The containment pressure is influenced by events both internal and external to the containment building. It is expected that leakage in the instrument air, breathing air, and service air systems will be the main contributors to containment pressure. External events are normal atmospheric pressure variances of approximately 2 inches of Hg. (.98 psi) that can cause internal containment pressure to increase. The pressure increase would be caused if the containment was being purged during an atmospheric high pressure front and isolated due to the fail safe design from a fault in the non-safety purge and make-up system and a subsequent passage of an atmospheric low pressure system. This external event could cause an increase in containment pressure by as much as one psi. Accordingly, the following rationale is applied in justifying the containment HI-1 setpoint pressure:

1.	Normal Containment Pressure	-0.01 psi
2.	Instrument Span	0 to 55.0 psi
3.	Channel Statistical Allowance	$\pm$ 2.4%
4.	Total Channel Inaccuracy	$\pm$ 1.32 psi
5.	Possible Containment Pressure Changes Due to Outside Weather Changes	~ .98 psi
6.	Estimated Internal Pressure Change (i.e., airleaks, etc.) Per Week	.75 psi
	TOTAL	~3.05 psi

The estimated internal pressure change is based on H. B. Robinson II operating experience. Additional pressure increases not included in this estimate are increases due to bulk containment temperature fluctuations within the normal operating band of the containment. An example of this would be during unit startup from cold conditions with the containment temperature at 80°F to power operation with containment temperature at 110°F. In this example, the internal containment pressure would increase approximately .8 psi.

The use of a 3.0 psi HI-1 setpoint is justifiable because it is consistent with NRC guidelines regarding NUREG-0737, Item II.E.4.2, Position 5. As shown above, a 3.0 psi setpoint ensures that the containment HI-1 pressure will provide timely actuation of the underlying safety function thereby assuring consistency with the plant accident analysis and provide operating margin to minimize the potential for spurious actuations.