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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF APPLICATIONS
& REPORTS

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the matter of)

HOUSTON LIGHTING & POWER COMPANY)

Docket No. 50-466

(Allens Creek Nuclear Generating)
Station, Unit No. 1))

DIRECT TESTIMONY OF ROBERT C. CHENG ON BEHALF
OF HOUSTON LIGHTING & POWER COMPANY ON BOARD
QUESTION 10 ON DRYWELL PRESSURE TESTING

Q. Please state your name, business position and
professional qualifications.

A. My name is Robert Cheng. My business address
is 160 Chubb Avenue, Lyndhurst, New Jersey. I am the
lead Containment Building Engineer employed by Ebasco
Services, Inc. on the Allens Creek Project. The statement
of my background and qualifications is attached as
Attachment RCC-1 to this testimony.

Q. What is the purpose of this testimony?

A. This testimony is to address Board Question 10
which requests the Applicant to verify that the ACNCS
drywell will be tested at some pre-specified value in
excess of design pressure.

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2 Q. Has the Applicant made any commitments regarding
3 drywell testing?

4 A. Yes. As stated in PSAR Section 3.8.3.7 the
5 Allens Creek drywell will be tested at 34.5 psig. This
6 is equivalent to 115% of design pressure (30 psig) in
7 accordance with NRC Reg. Guide 1.18 recommendations for
8 concrete containments. Moreover, if the Allens Creek
9 drywell is determined to be a prototype at the time of
10 testing, additional measurements such as drywell wall
11 strains and deflections will be recorded in accordance
12 with the Staff's technical position on "Structural Proof
13 Test of BWR Mark III Containment Drywell," as presented
14 in Appendix H of Supplement 1 to the NRC Safety Evaluation
15 Report of ACNGS.

16 Q. What is your conclusion?

17 A. The Applicant has committed to test the ACNGS
18 drywell to 115% of design pressure.
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Robert C. Cheng

I received a BSCE from Taiwan Provincial Cheng Kung University in 1963. I received a MS in Structural Engineering from the Virginia Polytechnic Institute in 1965. I received a PhD in Engineering Mechanics from Pennsylvania State University in 1972.

I have been employed by Ebasco since 1966, except for the period 1968-1971 during which time I was an instructor in the Engineering Mechanics Department at Pennsylvania State University where I taught courses in statics, dynamics and strength of materials and performed research on biomechanics topics for the National Heart Institute. Prior to 1966, I was employed as a Structural Designer for one year by the Chemplant Designer where I performed wind analysis and design for steel structured frameworks and heavy machine supports. I was a research assistant at Virginia Polytechnic Institute for one year where I performed research work on reinforced concrete and taught courses on reinforced concrete. I also worked part time for two years as an assistant engineer for the TaiAnn Construction Corporation where I assisted in the stress analysis of reinforced concrete and steel structures.

My first two years with Ebasco, I was a Senior Design Engineer with responsibility for the performance of analysis and design for the prestressed concrete structures of reactor buildings. I am now a principal engineer and I am responsible for development of various structural analyses and test programs on nuclear projects. I have supervised the dynamic analysis of containment loads, evaluated seismic and other dynamic qualification programs for safety related equipment, developed the Field Coil Integrity Test and the composite material test program for the Tokamak Fusion Test Reactor, prepared design specifications and supervision of dynamic and static stress analyses for reactor shield buildings and dry well structures, served as a special consultant for a stress analysis for a finite model study for the construction of reactor buildings, performed computer analysis and design for the internal structure of reactor buildings and performed computer analyses and design for reactor building foundations.