TEXAS UTILITIES SERVICES INC.
2001 BRYAN TOWER-DALLAS, TEXAS 75201-3050

Log # TXX-4034
File # 10010

August 26, 1983

Mr. B. J. Youngblood
Chief, Licensing Branch No. 1
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
POST-ACCIDENT SAMPLING SYSTEM (PASS)
CPSES SER (NUREG-0797) SUPPLEMENT NO. 2;
SECTION II.B.3

Dear Mr. Youngblood:

In regard to the open items listed in the CPSES SER Supplement No. 2, Section II.B.3, we submitted a response in FSAR Amendment 36. It is our understanding that the above response closed out all items with the exception of items 1.b, 4 and 6. Attached is supplemental information being provided to close out these remaining items.

Sincerely,

R A Wooman

H. C. Schmidt

RWH:grr
Attachment
cc: S. B. Burwell
James Wing

B001
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PROCEDURES FOR ON-SITE RADIOLOGICAL AND CHEMICAL ANALYSES
(Open Item #1.b)

Boron and Chloride

Instructions: CLI-250, "Operation and Calibration of the Ion Chromatograph"

CLI-901, "Determination of Boron and Chloride P.A.S.S."

The Dionex procedure for simulataneous chloride and boron analysis has been laboratory tested by Dionex using simulated post accident reactor coolant samples, stable fission products, caustic, cooling water impurities, and normal reactor coolant chemical additives. No sample matrix effects were observed within the specified measurement range (500-6000 ppm). However, Dionex is continuing laboratory tests on this procedure and CPSES chemistry will also attempt to run tests on samples subject to the chemical matrix outlined in Attachment 1 of NUREG-0737.

Total Dissolved Gases/Dissolved Hydrogen and Oxygen Concentration

Instructions: CLI-200, "Operation and Calibration of the Gas Chromatograph"

CLI-203, "Determination of Reactor Coolant Hydrogen"

CLI-204, "Determination of Hydrogen and Oxygen Gas Concentration"

range: 0 - 2000 cc/Kg
accuracy: $\pm$ 20% 50 - 2000 cc/Kg
$\pm$ 5% 0 - 50 cc/Kg

NOTE: Although no laboratory tests on the effects of high radiation fields have been conducted, there are no anticipated effects.

pH

Instruction: CLI-422, "Determination of Hydrogen Ion Concentration (pH)"

range: 0 - 14
accuracy: ± .3 pH units 5 - 9
± .5 pH units all other ranges

NOTE: General Dynamics has supplied CPSES with in-line pH measurement instrumentation for reactor coolant samples. This is the primary method for determination of pH in post accident reactor coolant samples.

Conductivity

Instruction: CLI-451, "Determination of Specific and Cation Conductivity"

range: 0.1 - 12000 umho/cm
accuracy: ± 20%

NOTE: General Dynamics has supplied CPSES with in-line conductivity measurement instrumentation for reactor coolant samples. This is the primary method of analysis.

Gross Activity, Gamma Spectroscopy

Instructions: CLI-733, "Determination of Gross Alpha and Gross Beta/Gamma Activity in Water Samples"

CLI-769, "Gamma Analysis of Charcoal and Particulate Filters"

CLI-770, "Gamma Analysis of Water"

CLI-771, "Gamma Analysis of Gas and Gases Dissolved and Entrained in Water"

CLI-900, "Sampling, Handling, Preparation and Analysis of Post Accident or Highly Radioactive Samples"

accuracy: These analyses are accurate within a factor of two across the entire range.

CORE DAMAGE ASSESSMENT PROCEDURE SUMMARY
(Open Item #4)

The purpose of the core damage assessment procedure at Comanche Peak Steam Electric Station (CPSES) is to provide a methodology for estimating the extent of reactor core damage following an accident. Assessments of core damage are classified by four damage categories: no damage, macroscopic clad damage, fuel overheat, and fuel melt. Before the final core damage assessment may be determined, information indicative of possible core damage must be obtained and preliminary calculations performed.

Core damage indicators employed in the CPSES methodology include incore thermocouple readings; containment and reactor coolant system (RCS) temperatures and pressures; isotopic activity concentrations in the RCS, containment sump, and/or containment air Post Accident Sampling System (PASS) samples; containment and main steam line radiation monitor readings; and the accident scenario. Additional instrument indications, including the loose parts monitor, reactor vessel level indication system (RVLIS), inoperable incore flux detectors, and containment hydrogen monitors, provide background information to support or clarify indications that core damage may have occurred.

After the core damage indicator information has been compiled, standardization and preliminary calculations are performed. The isotopic activity concentrations determined during analysis of the RCS, containment sump, and/or containment air samples must be standardized to indicate the concentrations at the damage evaluation time (i.e., reactor shutdown or time of trending evaluation). The sample isotopic activity concentrations are decay corrected, temperature and pressure corrected (air samples only), density corrected (RCS samples only), and dilution corrected (RCS and sump samples only) to conditions existing at the time of damage evaluation. Preliminary calculations include correction of the core source inventories due to power fluctuations, calculation of the total curie release from the RCS, calculation of the

fraction of total core inventory released, and calculation of noble gas and iodine isotopic ratios to determine whether the source of release is the fuel rod gap or fuel pellet.

An independent core damage assessment is then performed based on each indicator (listed in approximate order of importance and credibility): incore thermocouple readings; the types and amounts of isotopes in the RCS, containment sump, and/or containment air samples; isotopic ratios; containment and main steam line radiation monitor readings; total activity released from the RCS; and accident scenario. The assessment for each indicator, the additional instrument indications previously mentioned, and engineering judgement are utilized in determining the final assessment of core damage.

The CPSES core damage assessment methodology has been developed for use as a guideline to determine an estimate of reactor core damage following an accident. It utilizes the important indicators of reactor core damage, provides for comparison among indicator assessments, and allows for engineering judgement. Periodic updates to the methodology are expected as current information becomes available concerning reactor core damage assessment.

TESTING AND TRAINING
(Open Item #6)

All equipment and procedures which are used for post accident sampling and analyses are calibrated or tested every six (6) months. Operators shall receive refresher training in post accident sampling, analysis and transport every six (6) months.