DUKE POWER COMPANY
OCONEE NUCLEAR STATION - UNIT 1
ABNORMAL OCCURRENCE REPORT
AO-269/73-2
INCORE INSTRUMENT TUBE LEAK

Introduction

On May 19, 1973, while performing Test Procedure TP/1/B/800/27, "Incore Instrumentation Calibration," it was discovered that the incore instrument tube #46 was leaking into the incore instrument handling tank. Since there are no isolation valves on these lines, this leakage was stopped by freezing a portion of the tube with liquid nitrogen. Regulatory Operations Region II office was verbally notified of the incident on May 19, 1973.

Description of the Incident

Oconee instrument personnel entered the Unit 1 incore instrument handling tank on May 19, 1973, to perform test procedure TP/1/B/800/27, "Incore Instrumentation Calibration." They noticed some leakage through instrument tube #46 and immediately left the area to inform appropriate supervisory personnel. Subsequently, the leakage through this tube was determined to be 1/16 gallon per minute. Gaseous, air particulate, and liquid samples were taken in the incore instrument handling tank and analyzed for radioactivity. The leakage conditions were evaluated by the station staff to pose no serious health or safety problems to the public or to station personnel, and plant activities continued. Radiation and leakage monitoring continued on an hourly basis.

Corrective Action

On May 19, 1973, leakage was completely stopped by freezing a portion of the instrument tube. Liquid nitrogen was used to form an ice plug below the handling tank. On June 29, 1973, while the unit was in a cold shutdown condition, the incore instrument tube was cut just outside the handling tank, and a cap welded on to prevent leakage. The freeze seal was then removed.

Safety Analysis

Leakage through this tube was very minor (1/16 gallon per minute); external

radiation levels were minor, and loose contamination was well within controlled access area limits. The tube has a 1/8 inch OD and should it shear off completely, there is adequate capability with one high pressure injection pump, to bring the plant to a safe shutdown condition. It is concluded that the health and safety of the public was not adversely affected by this incident.