

ARKANSAS NUCLEAR ONE-UNIT 1

NON-ROUTINE RADIOLOGICAL ENVIRONMENTAL REPORT
No. 50-313/77-2

DESCRIPTION

During the month of October, 1977, milk and vegetation samples taken according to Environmental Technical Specifications 4.1.10 and 4.2.11 produced extrapolated annual dose rates greater than four (4) times the design objective and are therefore reportable by Environmental Technical Specification 5.6.2.b(1). The following cases were involved:

1. Three (3) sampling stations (including the control station) indicated I-131 infant thyroid dose from pasturage vegetation via milk pathway to be in excess of four (4) times the design objective. The extrapolated annual doses ranged from 260 to 470 mrem/year.
2. Seven (7) sampling stations (including the control station) indicated I-131 activity concentrations in terrestrial vegetation to be in excess of four (4) times the design objective. The activities ranged from 3700 to 6700 pCi/kg.
3. Two (2) sampling stations indicated radiostrontium (Sr-89, Sr-90) annual doses in milk samples to be in excess of four (4) times the design objective. Although the activities found in milk samples taken at the control station were not above reportable limits, they were considerably above normal. The reason for the lower activities at the control station is believed to be because the diet of cows at that station consisted of a considerably lower percentage of pasture grass than those showing reportable limits. The extrapolated annual dose for the two (2) reportable stations ranged from 76 to 193 mrem/yr for Sr-89 and 43 to 190 mrem/yr for Sr-90.

CAUSES

It is our conclusion that these escalated activities are not related to the operation of Arkansas Nuclear One-Unit 1 or any associated activities but rather due to radioactive fallout from the Chinese nuclear weapon test of 9/17/77.

As of this date, the Arkansas State Health Department has not analyzed milk samples collected in October for radiostrontium, however, they do agree with Arkansas Power & Light Company that these abnormal values are due to the Chinese nuclear weapons test of 9/17/77.

Further information on escalated radionuclide activities in samples was presented in our Non-Routine Radiological Environmental Report No. 50-313/77-1 of October 14, 1977.

PROGRAM TO REDUCE RADIONUCLIDE LEVELS

Since the escalated radionuclide levels in milk and vegetation samples are not related to the operation of Arkansas Nuclear One-Unit 1 but to radioactive fallout, no action is required by Arkansas Power & Light Company to reduce the levels.

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