

**LICENSEE EVENT REPORT (LER)**

(See reverse for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1)

Browns Ferry Nuclear Plant

DOCKET NUMBER (2)

05000259

PAGE (3)

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TITLE (4)

An overexposure of a minor in the third quarter of 1981 due to an incorrect year in the date of birth.

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	29	89	1999	- R001	- 00	11	23	1999	Unit 2	05000260
									Unit 3	05000296

OPERATING MODE (9) 5

POWER LEVEL (10) 000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

<input type="checkbox"/>	20.2201(b)	<input type="checkbox"/>	20.2203(a)(2)(v)	<input type="checkbox"/>	50.73(a)(2)(i)	<input type="checkbox"/>	50.73(a)(2)(viii)
<input type="checkbox"/>	20.2203(a)(1)	<input type="checkbox"/>	20.2203(a)(3)(i)	<input type="checkbox"/>	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(x)
<input type="checkbox"/>	20.2203(a)(2)(i)	<input type="checkbox"/>	20.2203(a)(3)(ii)	<input type="checkbox"/>	50.73(a)(2)(iii)	<input type="checkbox"/>	73.71
<input checked="" type="checkbox"/>	20.2203(a)(2)(ii)	<input type="checkbox"/>	20.2203(a)(4)	<input type="checkbox"/>	50.73(a)(2)(iv)	<input checked="" type="checkbox"/>	OTHER SPECIAL REPORT
<input type="checkbox"/>	20.2203(a)(2)(iii)	<input type="checkbox"/>	50.36(c)(1)	<input type="checkbox"/>	50.73(a)(2)(v)	<input type="checkbox"/>	Specify in Abstract below or in NRC Form 366A
<input type="checkbox"/>	20.2203(a)(2)(iv)	<input type="checkbox"/>	50.36(c)(2)	<input type="checkbox"/>	50.73(a)(2)(vii)	<input type="checkbox"/>	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (include Area Code)
James E. Wallace Jr., Site Licensing Engineer	(256) 729-7874

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

In accordance with the provisions of 10 CFR 20.2203, TVA is submitting this 30-day special report. On October 29, 1999, a radiation overexposure (15 mrem) to a minor (less than 18 years of age) in excess of the 10 CFR 20.104(a) limit(125 mrem) during the third quarter of 1981, was discovered.

In 1981, the requirements of 10 CFR 20.104 were in effect for exposure to minors. The requirements of 10 CFR 20.101(a) specified, in part, that rem per calendar quarter to whole body, head and trunk, active blood-forming organs, lens of eyes, or gonads should be limited to 1250 mrem for individuals in restricted areas. However, 10 CFR 20.104(a) established how licensees should control licensed material in such a manner as not to cause an individual under 18 years of age to receive in any period of one calendar quarter a dose in excess of 10 percent of the limits specified in 10 CFR 20.101(a). Therefore, no minor was allowed to receive a whole body dose greater than 125 mrem in any calendar quarter.

In the third quarter of 1981, an individual younger than 18 years of age received 140 mrem whole body dose, which is 15 mrem in excess of the 125 mrem limit of 10 CFR 20.104(a). The cause for the overexposure was an incorrect date of birth provided on the inprocessing TLD badge issue report, which depicted the individual's age as 18 years old. Corrective actions to preclude recurrence include: (1) dates of birth will be verified using a picture identification, and (2) individuals under the age of 18 may not enter the radiological control area. No significant somatic effects are expected from the 15 mrem overexposure.

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

**II. DESCRIPTION OF EVENT**

**A. Event:**

In 1981, the requirements of 10 CFR 20.104 were in effect for exposures to minors. The requirements of 10 CFR 20.101 (a) specified, in part, that rem per calendar quarter to whole body, head and trunk, active blood-forming organs, lens of eyes, or gonads should be limited to 1250 mrem for individuals in restricted areas. However, 10 CFR 20.104(a) established how licensees should control licensed material in such a manner as not to cause an individual under 18 year of age to receive in any period of one calendar quarter a dose in excess of 10 percent of the limits specified in 10 CFR 20.101(a). Therefore, no minor was allowed to receive a dose greater than 125 mrem in any calendar quarter. In the third quarter of 1981, an individual younger than 18 years of age received 140 mrem which is in excess of the 125 mrem limit of 10 CFR 20.104(a).

On June 18, 1981, an individual (Contractor) was issued a visitor TLD badge (81804) and monitoring of the individual's dose began. At the end of the month the individual's TLD badge was processed and his deep (whole body) dose was 0.000 mrem (in 1981, it was TVA's practice to issue TLDs monthly). On July 1, 1981, he was issued another TLD. On July 18, 1981, the individual lost the issued TLD. An investigation report (81347) was performed. Since the TLD was lost, the individual's accrued dose was estimated based on recorded pocket chamber values. The pocket chamber values indicated a dose of 50 mrem. He was issued another TLD. This TLD was processed at the end of July and indicated a dose of 56 mrem. A new TLD was issued. On August 8, 1981, the individual terminated employment at BFN. His TLD was processed with a dose of 34 mrem recorded.

On August 1, 1982, the individual was rehired at BFN. At this time, records show his date of birth to be June 13, 1964. On August 17, 1982, the individual again terminated employment at BFN. His TLD was processed with a dose of 72 mrem recorded.

The first three TLDs issued to the individual were apparently issued in 1981 by three different security officers. There was a block on the TLD issue forms to include the individual's date of birth. On all three forms, the birth year was recorded as 1963 and not 1964 (later determined to be the correct birth year). Consequently, the individual was presumed to be 18 years of age (an adult).

**Dates and Approximate Times of Major Occurrences:**

June 18, 1981

A contractor individual was issued a visitor TLD badge (81804) and monitoring began. Birth date on TLD issue form was recorded as

July 18, 1981

The individual lost issued TLD. An investigation report (81347) was performed. Dose was estimated based on recorded pocket chamber values. A new TLD was issued.

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August 8, 1981	The individual terminated employment at BFN.
August 1, 1982	The individual was rehired at BFN. At this time, records show date of birth
August 17, 1982	The individual again terminated employment at BFN.
October 29, 1999	TVA discovered that an overexposure to a minor occurred in 1981.

**E. Method of Discovery**

In October 1999, during an ongoing TVA exposure record reconciliation project, the exposure to this individual was discovered.

**III. CAUSE OF THE EVENT**

**A. Immediate Cause**

An incorrect date of birth year (1963 instead of 1964) was recorded on forms prior to issuing a TLD on three separate occasions. The initial birth date recorded indicated that the individual was over 18 years of age in 1981. His radiation exposure was controlled under the requirements for an adult, when, in fact, the individual was a minor.

**B. Root Cause**

The root cause of this overexposure was a failure to verify the individual's date of birth.

**IV. ANALYSIS OF THE EVENT**

The average annual natural background dose from different types of radiation sources to an individual in the U.S. population is 295 mrem. This dose far exceeds the overexposure of 15 mrem to the individual described in this event. Therefore, this event did not have a significant somatic effect on the individual.

**V. CORRECTIVE ACTIONS**

**A. Immediate Corrective Actions**

A problem evaluation report was initiated to investigate the individual's overexposure and to track identified corrective actions.

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**B. Corrective Actions to Prevent Recurrence**

Corrective action to preclude recurrence is to verify date of birth. In addition, Standard Programs and Process (SPP)-5.1, Step 3.4.1.6.D. states 'individuals under the age of 18 may not enter radiologically controlled areas.'

**VI. ADDITIONAL INFORMATION**

Attachment A provides required information pursuant to 10 CFR 20.2203(b)(2) and should be distributed on a need to know basis.

**VII. COMMITMENTS**

None.