

11/14/83

VIRGIL C. SUMMER NUCLEAR STATION
NUCLEAR OPERATIONS PROCEDURES

EMERGENCY PLAN PROCEDURES

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* Safety Related Procedure

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EPP-021	Activation of the Early Warning Siren System (EWSS)	5	5/25/83
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SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY No.....157.....

EMERGENCY PLAN PROCEDURE

EPP-020

EMERGENCY PERSONNEL EXPOSURE CONTROL

REVISION 3

NOVEMBER 3, 1983

SAFETY RELATED

Mark Counts
DISCIPLINE SUPERVISOR

11/7/83
Date

W. Bralham
APPROVAL AUTHORITY

11/9/83
Date

NOV 14 1983

DATE ISSUED

RECORD OF CHANGES

CHANGE NO.	TYPE CHANGE	DATE APPROVED	DATE CANCELLED	CHANGE NO.	TYPE CHANGE	DATE APPROVED	DATE CANCELLED

EPP-020
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REVISION 3
11/3/83

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1.0 PURPOSE

- 1.1 Provide guidelines for issuing dosimetry and controlling personnel exposure when responding to conditions that have placed the plant in an Alert, Site, or General Emergency status.

2.0 REFERENCES

- 2.1 Virgil C. Summer Nuclear Station Radiation Emergency Plan.
- 2.2 10CFR20.
- 2.3 NCRP Report #39 "Basic Radiation Protection Criteria".
- 2.4 HPP-153, "Administrative Exposure Limits".
- 2.5 HPP-150, "Issuance and Control of Personnel Dosimetry".
- 2.6 HPP-505, "Issuance and Control of Personnel Dosimetry".
- 2.7 NCRP Report #55, Protection of the Thyroid Gland in the Event of Releases of Radioiodine.
- 2.8 CHP-309, Emergency Operations Facility Dose Assessment Guidance.

3.0 CONDITIONS AND PREREQUISITES

- 3.1 Limits and Precautions.
 - 3.1.1 This procedure may be activated by the Interim Emergency Director/Emergency Director or Radiological Assessment Supervisor when conditions dictate. Any deviations from this procedure should be authorized by the Interim Emergency Director/Emergency Director or Radiological Assessment Supervisor and documented. As soon as conditions allow return to normal plant procedures.
- 3.2 In an emergency, the following exposure limits may be utilized:

4.2.3 As soon as conditions allow and at the direction of the Interim Emergency Director/Emergency Director or the Radiological Assessment Supervisor, normal dosimetry issue and exposure control should be reinstituted in accordance with references 2.4 and 2.5.

4.2.4 Responsibilities of Health Physics:

- a) Proper collection of dosimetry.
- b) Completion of dose cards and Attachment I's.
- c) Completion of all required personnel exposure records.

4.3 Use of KI thyroid blocking agent.

4.3.1 The Director of Health Physics or Radiological Assessment Supervisor shall determine the need for administering KI (stored in the TSC).

4.3.2 KI should be administered within one hour following an acute uptake that involves a projected thyroid exposure greater than 10 Rem. Guidelines are:

4.3.2.1 Individuals suspected to have received greater than 650 MPC-hours of internal exposure to radioiodines should be showered and analyzed by whole body counting (torso) immediately following the uptake. Measured torso burdens greater than 4 Ci (I-131) may result in a thyroid exposure greater than 10 Rem.

4.3.2.2 If conditions do not allow whole body counting within two hours after the uptake, the estimated MPC-Hour exposure should be used to determine the need for KI.

4.3.2.3 KI (100-300 mg) should be taken on a daily basis not to exceed 7-10 days until the thyroid uptake of radioiodine is adequately blocked.

4.3.2.4 Any individual has the right to refuse KI and accept the resulting thyroid exposure.

4.3.3 Attachment II must be completed prior to
administering KI.

4.4 EOF Exposure Control.

4.4.1 EOF exposure control will be performed in accordance
with CHP-309.

ACUTE UPTAKES INVOLVING PROJECTED
THYROID DOSE COMMITMENTS GREATER THAN 10 REM

Date: _____ Time: _____

<u>Name</u>	<u>TLD#</u>	<u>MPC-HRS/Time of Estimate/Uptake</u>	<u>I-131 Torso/Time of Burden(μCi) Count</u>	<u>Time KI Taken</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

The threshold for the possibility to experience thyroid abnormalities after uptake of radioiodines is estimated at 20 Rem (low probability of 6×10^{-4}). Higher probabilities (greater than .075) exist with thyroid exposures greater than 2500 Rem.

KI can be taken after an uptake to prevent accumulation of radioactive iodine in the thyroid due to saturation of the thyroid with stable iodine. KI is over 90% effective if administered within one hour after the uptake and over 50% effective if administered within three to four hours after the uptake.

Usually, side effects of potassium iodide happen when people take higher doses for a long time. You should be careful not to take more than the recommended dose or take it for longer than you are told. Side effects are unlikely because of the low dose and the short time you will be taking the drug.

Possible side effects include skin rashes, swelling of the salivary glands, and "iodism" (metallic taste, burning mouth and throat, sore teeth and gums, symptoms of a head cold, and sometimes stomach upset and diarrhea).

A few people have an allergic reaction with more serious symptoms. These could be fever and joint pains, or swelling of parts of the face and body and at times severe shortness of breath requiring immediate medical attention.

Taking iodide may rarely cause overactivity of the thyroid gland, underactivity of the thyroid gland, or enlargement of the thyroid gland (goiter).

If side effects are noted or if you have an allergic reaction, stop taking potassium iodide. Then, notify the Director, Nuclear Plant Operations and obtain medical assistance as needed.

The only people who should not take potassium iodide are people who know they are allergic to iodide. You may take potassium iodide even if you are taking medicines for a thyroid problem (for example, a thyroid hormone or antithyroid drug). Pregnant and nursing women and babies and children can also take this drug.

ACKNOWLEDGEMENT

I understand and accept the risk associated with receiving KI and will not hold SCE&G Company liable for any payments or costs resulting from side effects excluding that provided by normal Company policies.

Signature(s)

Date

Time

I choose to accept thyroid exposure instead of minimizing thyroid exposure by taking KI. I will not hold SCE&G Company liable for any subsequent thyroid abnormalities which may be related to thyroid exposure.

Signature(s)

Date

Time

Assoc. Manager of Health Physics (or)
Radiological Assessment Supervisor

Director, Nuclear Plant Operations
(or) Emergency Director