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DEC 28 1976

Ronald L. Ballard, Chairman
Advisory Committee on Standardized
Environmental Technical Specifications
(ACSETS)

Thru: J. Kastner, Chief, Environmental Standards Branch, SD

COMMENTS ON DRAFT ENVIRONMENTAL TECHNICAL SPECIFICATIONS FOR THREE MILE ISLAND

The attached comments on the draft Three Mile Island Technical Specifications were prepared before receipt of the Minutes of the November 11, 1976 meeting. My only additional comment, which is prompted by these Minutes, is that I do not agree that the format of Section 4, "Special Studies," should be the same as that for Section 3. If the Section 3 format can be applied to a particular study, it can be included in Section 3. However, the Section 3 format is not suitable for laboratory studies, one-time field studies, etc. (see RG 4.8). Apparently, there needs to be more discussion of format for Sections 3, 4, and, possibly, for the Section 5.8, "Special Requirements."

J. Buchanan
Environmental Standards Branch
Office of Standards Development

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Enclosure:
As stated

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COMMENTS ON NOVEMBER 8, 1976 DRAFT OF THREE MILE ISLAND ENVIRONMENTAL TECHNICAL SPECIFICATIONS

1.0 Definitions

The definitions of time periods (annually, quarterly, semi-monthly, weekly) are both very unusual and ambiguous. We recommend deletion of these definitions and, instead, following the suggestion made at the meeting to include in the tech. specs. a variance in specified minimum elapsed time periods of X% (25%).

The definition given for "composite sample" is actually a definition for a "proportional composite sample." In general, a composite sample is any sample made up of distinct parts.

The definition of "daily maximum concentration" is incorrect in stating that "...concentration means the...determination..." Suggest revising to: "Daily maximum concentration means the maximum concentration recorded for any calendar day."

This definition of "Functional Test" should be deleted. It is taken from Standard Appendix A tech. specs. but it conflicts with the definition of the same term as used for radioactive effluent monitoring. (See attached definition from the December 3 draft of the Radioactive Effluent Standard Tech.Specs.)

The definition of "Gamma Scan (Gamma Spectroscopy)" should be deleted. It is not needed in tech. specs. (The definition given is also misleading in that it indicates only a qualitative analysis.)

The definition of "Grab Sample" should be changed to delete the too specific requirement of "...collected in less than fifteen minutes."

The definition of "Indicator Station" seems to imply that the perception of adverse environmental effects is expected at such a location. Suggest: "An indicator station is a sample location at which it may be possible to detect environmental effects of station operation."

The definition of "Instrument Check" should be deleted as unnecessary. The definition given is actually a definition of a visual check of an instrument.

In response to public comments the RG 4.8 review group has agreed that requirements for reporting "Unusual or Important events" of this type should not be in the environmental tech. specs.

Definitions relating to radioactive effluents (§ 2.4 of R.G. 4.8) have been suggested by J. Boegli for inclusion in R.G. 4.8, however, he now agrees that inclusion of definitions in the standard tech. specs. would be more appropriate than including them in the Guide. (See definitions attached.)

The addition of definitions for "precision" and "accuracy" was suggested in the meeting. The following definitions are taken from Analytical Chemistry and are suggested for use in the tech. specs. if it is decided that definitions of these terms are needed in the tech. specs.

Accuracy - normally refers to the difference (error or bias) between the mean, \bar{X} , of the set of results and the value \hat{X} , which is accepted as the true or correct value for the quantity measured. It is also used as the difference between an individual value X_i and \bar{X} . The absolute accuracy of the mean is given by $\bar{X} - \hat{X}$ and of an individual value by $X_i - \bar{X}$. The relative accuracy of the mean is given by $(\bar{X} - \hat{X})/\bar{X}$, and the percentage accuracy by $100 (\bar{X} - \hat{X})/\bar{X}$.

Precision - relates to the reproducibility of measurements within a set, that is, to the scatter or dispersion of a set about its central value.

2.0 Limiting Conditions for Operation

2.1 Thermal

The specification and surveillance requirement do not correspond to one another. Either the specification(s) should be rewritten to provide limits on inlet and discharge water temperatures and flow rate through the cooling towers in order to correspond to the draft surveillance requirement or the surveillance requirement should be rewritten to provide surveillance of the mode of operation of the station in order to correspond to the draft specification.

On p. 4, in line 2 of the Bases, is "endorses" an appropriate word?

2.2 Chemical

2.2.1 pH

Delete "SU" after the pH units on pp 5 and 6 and add the word "inclusive."

In line 4 of the Surveillance requirement, add the words "and measurement" after the word "sampling."

2.2.2 Biocide

The Draft Supplement to the FES and the EPA effluent limitation guidelines discuss "free available" and "total residual" chlorine, but the LCO covers "free residual" chlorine. This is confusing. Consistent terminology should be used in the FES and LCOs. Presumably "free residual" in the LCO has the same meaning as "free available" in the FES and in the EPA effluent limitations.

3.0 Environmental Surveillance

It is our understanding that the Committee prefers the title "Environmental Monitoring" (to avoid confusion with the "surveillance" requirements associated with LCOs) and the following format:

- . Environmental Monitoring Requirement
- . Applicability
- . Action
- . Bases

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We concur in this format for Environmental Monitoring Requirements.

1.2b Terrestrial

We question the basis (need) for erosion control inspection, transmission rights of way management, and aerial remote sensing as environmental monitoring program elements. We have referred to NUREG-0066 (July 76) (which is the draft supplement to the FES and which includes the FES as Appendix B) and, as indicated in the following comments on these program elements, are unable to verify statements concerning the FES which are made in the Bases sections for these program elements in the draft tech. specs.

2.b(1) Erosion Control Inspection

Specification of practices relating to erosion control as an environmental surveillance (monitoring) program element is inconsistent with R.G. 4.8 in which this type of activity is listed as an example of a "Special Requirement" (R.G. 4.8 § 5.8, p.12)

The requirement for field logs is a record-keeping rather than a reporting requirement.

The "Bases" refer to "the environmental assessments as defined in the Final Supplement FES-OL of 1976 (Section 6.5)"; however, section 6.5 of NUREG-0016 (p.6-2) merely indicates that during normal transmission line inspections, notations be made of any areas which may require reseeding and that a brief report of any such areas and confirmation of action to remedy the condition should accompany the annual report.

2.b(3) Aerial Remote Sensing

Why specify any particular minimum time period (5 years) for possible modification or deletion of this program element? Modification may be desirable earlier than this.

Commitments for NRC action (in "Surveillance Requirements" and "Reporting Requirements") are inappropriate in tech. specs.

"Bases" should refer to § 6.5 of the draft supplement to the FES in which it is stated that "a low altitude true and false color aerial photography program should be implemented for correlation with the vegetation surveys."

4.0 Special Surveillance and Study Activities

The LCO type of format used in this section is inappropriate for special surveillance and study activities and is inconsistent with RG 4.8.

4.1 Residual Chlorine Surveillance Program

The comment for § 2.2.2 concerning the term "free residual" chlorine applies to this section also.

RADIOACTIVE EFFLUENT
STANDARD TECHNICAL SPECIFICATIONS

Section 2.4

FOR BOILING WATER REACTORS

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STANDARD TECHNICAL SPECIFICATIONS
SECTION 2.4

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Definitions

The definitions given below are of a restricted nature and apply to terms used in these Technical Specifications.

ACTION: Action shall be those additional requirements specified as corollary statements to each principle specification and shall be part of the specifications.

BATCH RELEASE: A batch release is the discharge of fluid wastes of a discrete volume.

CALIBRATION: An instrument or device calibration shall be the adjustment, as necessary, of the output such that it responds with the necessary range and accuracy to known values of the parameter(s) which the instrument sensor or device monitors. The calibration shall encompass the entire circuit including the sensor, indicator, control feature, alarm and/or trip function(s), and shall include the functional test. The calibration may be performed by any series of sequential, overlapping or total circuit steps such that the entire circuit is calibrated as specified. The methodology and measurement of instrument accuracy and precision of calibration shall be recorded in the plant records.

CONTINUOUS RELEASE: A continuous release is the discharge of fluid waste of a non-discrete volume, e.g., from a volume or system that has an input flow during the continuous release.

EFFLUENT RADIATION MONITOR: An effluent radiation monitor is an instrument to provide continuous indication of the level of radioactive materials in effluents to unrestricted areas. An effluent radiation monitor can provide automatic isolation or valve closure on the monitored effluent line prior to exceeding a specification. Implicit with the definition is the requirement that flow control shall be provided by either an established minimum flow switch or an actual rate signal from a flow indicator-controller and that an alarm device be provided locally and in the main control room to enunciate at the specified set point.

FREE WATER: Free water is defined as uncombined water not bound by the solid matrix following solidification of radioactive wastes.

FUNCTIONAL CHECK: A functional check shall be the injection of a simulated signal into a circuit at the primary sensor to verify circuit behavior during observation. Instrument checks shall permit observation of an established value other than a value observed when the instrument is de-energized. Sensor checks shall permit observation of an established value

while disconnected from its normal circuit function and subjecting the sensor to the parameter(s) normally monitored. Functional checks shall include alarm and/or trip functions but may be blocked from performing the ultimate specified function.

FUNCTIONAL TEST: A functional test shall be a verification of operability by performing all specified functions using the parameter(s) which the instrument sensor or device monitors.

KNOWN RADIOACTIVE SOURCE: A known radioactive source is a referenced calibration source capable of reproducible geometry, emitting beta and gamma radiation with energies covering the range of the radiation monitor and containing one or more radionuclides normally measured by the radiation monitor. All sources used for calibration shall be calibrated by a measurement system which is traceable to the National Bureau of Standards radiation measurement systems, and the plant records shall contain a copy of this information.

OPERABLE - OPERABILITY: A system, subsystem, train, component, or device shall be operable or have operability when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, electric power, cooling or sea water, lubrication or other auxiliary equipment that are required for the system, train, component or device to perform its function(s) are also performing their related support function(s).

PROCESS RADIATION MONITOR: A process radiation monitor is an instrument to provide continuous indication of the level of radioactive materials in non-effluent lines or tanks.

UNRESTRICTED AREA: An unrestricted area is any area, access to which is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials, and any area used for residential purpose. Control of such access requires the licensee to fulfill the obligations of 10 CFR Part 20.101, 20.102, 20.103, 20.202, 20.206 and 20.401, notwithstanding that for the purposes of 10 CFR Part 20.106, 50.34 and 50.36, the boundaries are clearly defined as follows: (description of the site boundaries to be provided by the licensee).