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Rules and Directives Branch
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Gentlemen:

NUCLEAR REGULATORY COMMISSION (NRC) - PUBLIC COMMENT ON DRAFT
REGULATORY GUIDE (DG)-1087 (66 *Federal Register* 11611)

TVA is pleased to provide comments on DG-1087. On February 26, 2001, the NRC re-issued for public comment DG-1087, *Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release*. DG-1087 proposes revisions to Regulatory Guide (RG)-1.78.

The NRC staff revised DG-1087 to (1) update the list of toxic chemicals and associated limits to correspond with the *NIOSH Pocket Guide to Chemical Hazards*, (2) bring risk insights into the process, and (3) make the guidance more performance-based. The proposed RG was also revised to incorporate the unique portions of RG 1.95, *Protection of Nuclear Power Plant Control Room Operators Against Accidental Chlorine Release*. RG-1.95 contains guidance that is very similar to RG-1.78. When the revised RG-1.78 is issued, the NRC proposes to withdraw RG-1.95.

The enclosure provides TVA's comments on DG-1087. If you have any questions, please contact Rob Brown at (423) 751-7228.

Sincerely,

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Enclosure

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COMMENTS ON DG-1087

COMMENT NUMBER	PAGE	SECTION	PARA. NUMBER	COMMENT	PROPOSED CORRECTIVE ACTION
1.	General			Items being incorporated from RG 1.95 should be specifically designated in the revised RG 1.78 as applying only to plants having liquid chlorine.	Incorporate proposed changes.
2.	General	--	--	The scope of the draft RG is not explicitly clear that it encompasses chlorine and that RG 1.95 is superseded by the revised guide.	Revise the introduction to make this clear.
3.	General	--	--	The draft RG includes chlorine as one of the hazardous chemicals. Therefore, it is redundant to explicitly call chlorine as one of the hazardous chemicals. Elimination of this explicit call out will avoid confusion.	Eliminate the explicit call out of chlorine when providing guidance for all hazardous chemicals.
4.	2	B	--	<p>The DG specifies that the guide addresses both toxic and asphyxiating chemicals, but gives no guidance on asphyxiating chemicals other than the general statement that "asphyxiating chemicals need be considered only if their release results in displacement of a significant fraction of the control room air."</p> <p>Table 2 allows for the determination of weights of toxic chemicals that can be exempted from further consideration. A similar table or quantitative method should also be provided to allow for determination of exempt weights of asphyxiating chemicals.</p>	Provide a table or quantitative method to acceptable method to determine the weights of asphyxiating chemicals that can be exempted.
5.	2	B	--	The use of the term "significant fraction" should be quantified.	Quantify term "significant fraction."
6.	3	C	1.1	Note 1 should be included as part of Table 1. Table 1 is referenced in several sections which does not include this note.	Move Note 1 to Table 1.
7.	3	B	1	The draft RG utilizes two minutes after detection for taking protective measures (e.g., donning protective clothing/SCBA). This timeframe should be allowed to increase if the IDLH exposure duration is 30 minutes, and it can be shown that the increased time is acceptable.	Add the following wording to the paragraph, . . . "An increase in the response time would be acceptable if it can be shown that Operator health is not in danger (i.e., an increase in response time from 2 minutes to 5 minutes)."
8.	3	C	1.1	The terms "including chlorine" and "onsite" in the first sentence are redundant and should be removed. The phrase hazardous chemicals include chlorine, and storage within 0.3 miles does not have to be on the site.	Delete the terms.

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9.	3	C	1.1	This paragraph sites chlorine-specific requirements, but the requirements logically apply to other hazardous chemicals. For example, it may be unacceptable to have greater than 20 lb. of ammonia stored within 330 ft. of Control Room/air intakes.	Delete the chlorine-specific requirements.
10.	3	C	1.1	Delete chlorine-specific statements, since this applies to other hazardous chemicals also.	Delete chlorine-specific statements.
11.	4	C	1.1	<p>The paragraph states:</p> <p>“If there are several chlorine containers, only the failure of the largest container is normally considered in the evaluation unless the containers are interconnected in such a manner that failure of a single container could cause a chlorine release from several containers.”</p> <p>This statement is in conflict with Paragraph 6 of Section 3.2, that states:</p> <p>“For both types of accidents, release of contents during an earthquake, tornado, or flood should be considered for chemical container facilities that are not designed to withstand these natural events.”</p> <p>It appears to imply that a seismic event or tornado results in simultaneous maximum concentration accidents for each chemical.</p>	<p>Revise Paragraph 6 of Section 3.2 to read:</p> <p>“For both types of accidents, release of contents during an earthquake, tornado, or flood should be considered for chemical container facilities that are not designed to withstand these events. In the evaluation of control room habitability, it may also be appropriate to consider release from a single onsite container or pipe coincident with the radiological consequences of a design basis loss-of-coolant accident.”</p>
12.	4	C	1.1 and Table 2	A manual isolation is an appropriate action for chemicals that have low odor thresholds and are used at a plant. Revise Table 2 to include a fourth Control Room Type for low leakage with no automatic isolation.	Add a forth “Control Room Type” to Table 2.
13.	4	C	1.2	This is applicable to both stationary and mobile sources and should be repeated under C1.1 or made a separate section.	Incorporate the proposed change.
14.	5	C	Table 1	Notes a, b, and c should be shown to apply on the right hand columns.	Implement the proposed change.
15.	5	C	Table 1	The title should identify that the limits are the IDLH values.	Revise Table 1 title.
16.	5	C	Table 1	For all the chemicals following Nitrogen, the Toxicity Limit values are not lined up correctly. For example, the value of 2 mg/m ³ should be lined up with Sodium Oxide, the 100 ppm and 520 mg/m ³ should be lined up with Sulfur dioxide, etc.	Correct this format discrepancy.

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17.	6	C	Table 2	The control room types are inconsistent with what we know about control rooms now. The table is based on a control room of 200,000 cubic feet net volume and a specific air change rate. The leakage correspond to 50 cfm for Type A; 200 cfm for Type B, and 4000 cfm for Type C. Additionally, note (a) negates Type A and B controls rooms as it requires all chemicals in excess of 100 pounds be evaluated if within 0.3 miles of the control room (not CR air intake). Also note that the ratios between the various columns are not consistent. It appears that the table needs revision.	Revise the table, for example, to have one column based on a Type C control room. This would still require evaluating all chemicals in amounts over 100 pounds within 0.3 miles of the control room. Then add a note to identify that if the leakage can be shown to be less than what is used in the table, the weights can be adjusted accordingly.
18.	6	C	Table 2	It is unnecessary to duplicate this table here and in Appendix A. Revise the text to eliminate the table and reference the table in Appendix A.	Incorporate the proposed revision.
19.	7	C	3	Section 3 should clarify that if a detailed evaluation of CRH for a specific chemical shows that the highest instantaneous concentration predicted in the control room, without the implementation of protective measures, is below the IDLH value, then the chemical species is below the IDHL and needs no further consideration. If the detailed evaluation predicts that the IDLH value will be exceeded in the control room for any time duration, then the protection measures discussed in Regulatory Position, Section 4, are applicable.	Add clarifying test to the section.
20.	7	C	3.1	Change "toxicity limit" to "IDLH limit."	Incorporate the proposed revision.
21.	7	C	3.1	The "case-by-case basis" guidance for addressing uncommon chemicals is insufficient, (e.g., in some cases, use of the odor threshold as the IDLH, for a calculation basis, would be unnecessarily conservative).	Change the second sentence in Paragraph 3 to read: "The human detection threshold (such as the odor threshold), or TLV or STEL limits, may be used when no detection instruments are available in the control room for the hazardous chemical under consideration."
22.	8	C	Table 3	Item 4 - Change "toxicity limit" to "IDLH limit."	Incorporate the proposed revision.

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23.	9	C	3.2	Plants are not design for coincidental occurrence of two independent design basis events. Unless the probability of both occurring meets the risk parameters in Section 2, or one event is a result of the other, this sentence should be deleted.	Delete the criteria to evaluate coincidental occurrence of two independent design basis events.
24.	10	C	3.4	Delete chlorine-specific reference in "chlorine-contaminated."	Implement proposed change.
25.	10	C	2	The paragraph refers to "outside air." The term should be clarified.	Revise "outside air" to "atmospheric ambient air." Otherwise, the outside may be interpreted as adjacent rooms internal to a building.
26.	10	C	3.4	The 10 cfm has no basis, especially if the contaminant is at significantly higher pressure than the control room (i.e., pressurized CO2 system release).	The air exchange caused by ingress or egress should be accounted for when control rooms are not furnished with airlock doors.
27.	11	C	3.4	Change "particulate" to "chemical", since hazardous chemicals are not necessarily in particulate form.	Implement the proposed change.
28.	11	C	4	Delete "automatically" in Item 2, since manual isolation may also be acceptable in case of some of the control rooms.	Implement the proposed change.
29.	12	C	4.2	Delete the statement, "For most control rooms, this time should be less than or equal to 10 seconds," since the acceptable isolation time could vary substantially on a case-by-case basis.	Delete the statement.
30.	12	C	4.2	Delete "radiological" since plants are not designed for coincident occurrence of two independent design basis events. Rewrite to be consistent with the existing licensing basis. There should be no prohibition against "enhanced air exchange" so long as it is appropriately treated in the habitability evaluation.	Implement the proposed change.
31.	12	C	4.2	Delete chlorine-specific reference. This should not be limited to "onsite chlorine storage."	Delete chlorine-specific reference.
32.	12	C	4.2	Delete the comma after "components" and add "for."	Revise the sentence to read: "The isolation system and its components for the re-circulating filter system . . . events."

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33.	12	C	4.3	Delete "including chlorine," since hazardous chemical is all-inclusive.	Implement the proposed change.
34.	12	C	4.3	<p>The phrase, "meet the single-failure criterion" lacks clarity. Redundancy could mean respirators = 2 x people. Separation could mean two separate storage cabinets. Protective clothing failure could mean two layers of clothing. Duration of a toxic chemical incident could mean that there is a long-term period requiring passive failures.</p> <p>A single toxic event should not prevent the utilization of these systems to respond to the event. Using single-failure criterion invokes other design considerations to go beyond the mere impact from a single toxic event.</p>	<p>Revise to read:</p> <p>"Breathing apparatus, air supply equipment, and protective clothing should meet the criterion that a single toxic gas event would not render these systems nonfunctional, i.e., physical separation to accomplish de-coupling of the effects of unsafe environmental factors resulting from the event and physical constraints."</p>
35.	13	D	2	In the Implementation portion, it states that this RG would be applied to plants seeking license extension. This seems to be inconsistent with the requirements for license extension. In general, plants retain their current license basis. The exceptions occur when an issue is associated with potential degradation due to an aging mechanism. The controls for evaluating hazardous chemical releases on the control room should not have anything to do with aging or license extension.	<p>Revise last sentence to read:</p> <p>"Except in those cases . . . the methods to be described in the revised guide reflecting public comments will be methods acceptable to the NRC staff for implementing specific parts of the NRC's Regulations."</p>