Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

January 21, 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Quad Cities Station Units 1 and 2
Radiological Effluent Technical
Specifications (RETS) Draft Submittal
NRC Docket Nos. 50-254 and 50-265

Reference (a): C. A. Willis letter to R. Bevan
dated August 17, 1982.

(b): N. J. Kalivianakis letter to J. W.
Mandler (EG&G) dated February 23, 1982.

Dear Mr. Denton:

In Reference (a), Quad Cities Station provided a draft RETS submittal which addressed 43 generic and 21 site-specific comments discussed in a February 8, 1982 meeting with members of your staff and Mr. J. Mandler of EG&G Idaho, Inc. Commonwealth Edison later received in Reference (b) 103 more comments on the Quad Cities draft RETS submital to be discussed in a conference call. Due to the large number of comments, we informed the Quad Cities Project Manager that our comments would be provided in writing.

Accordingly, Attachment 2 to this letter provides our response to the EG&G comments of Reference (a). Attachment 4 provides a revised draft RETS submittal for Quad Cities Units 1 and 2 which now incorporates these responses. Please note that our response to items 36, 38, 50, 53, and 87 (including the associated RETS changes) is preliminary and subject to change. These items are undergoing detailed review, and will be updated in February, 1983.

Please also note that although Quad Cities Station is the lead plant among Dresden, Quad Cities and Zion Stations, these responses are drafts and in no way represent our current position at Dresden and Zion stations. It is likely that this response will be applicable to Dresden and Zion (particularly in areas of corporate responsibility such as environmental monitoring). However, until Dresden and Zion stations have reviewed the Quad Cities response and revised it to accommodate their site-unique features and philosophies, this response cannot be construed as being any more than a Quad Cities current position.

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Because of its voluminous nature, and because the draft RETS are being provided for discussion purposes only, Attachments 3 and 4 are being transmitted only to EG&G and the NRC Quad Cities Project Manager.

Please address any questions you may have concerning this matter to this office.

One (1) signed original and forty (40) copies of this transmittal are provided for your use.

Very truly yours,

Thomas J. Rausch

Thomas J. Rausch
Nuclear Licensing Administrator

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Attachments:
1. EG&G Comments on QC RETS (from Ref. (a))
2. CECo Response to Comments
3. QC Liquid Effluent Monitor Calibration Procedures
4. Draft QC RETS Submittal

cc. QC Resident Inspector (w/Att 1,2)
R. Bevan (w/Att 1,2,3,4)
J. W. Mandler (w/Att 1,2,3,4)

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ATTACHMENT 1

REVIEW OF REVISED QUAD CITIES RETS SUBMITTAL

As a result of discussions between NRC, Commonwealth Edison, and EG&G Idaho personnel on 2/8/82, the Quad Cities RETS submittal was reviewed by the utility and resubmitted. This revised submittal was subsequently reviewed and the following is a list of comments. Some of the comments pertain to areas that remain unresolved or where more information is needed while others point out areas where alternatives to the requirements in the model RETS (NUREG 0473) are being allowed. In particular, comments 3, 4, 11, 12, 13, 19, 26-29, 34, 37, 40, 41, 43-45, 47, 48, 50, 52, 58, 69, 70-72, 75, 87, 88, 90, 96, and 101 do not pertain to unresolved areas, but to typographical errors, items which are more restrictive than the model RETS, areas where alternatives to the requirements in the model RETS are being allowed, etc. Comment 93 pertains to bases statements, which are not enforceable.

No.	NUREG 0473	Quad Cities	Comment
1	1.9 1.10	--- ---	This definition is in an existing tech. tech. spec. We would like to review it.
2	1.29	MM	This definition applies only to monitors with integral sources. Do all monitors at Quad Cities have integral sources? If not, how is source check defined for them?
3	3.3.7.11 Action a 3.3.7.12 Action a	3.2.G.1 3.2.H.1	The words "without delay" can be used instead of the word "immediately" in 3.2.G.1 and 3.2.H.1. Then can add to the end of 3.2.G.1 and 3.2.H.1 the words "or change the setpoint so it is acceptably conservative."
4	3.3.7.11 Action b 3.3.7.12 Action b	3.2.G.2 3.2.H.2	The action, as stated, meets the intent of RETS, but it is more restrictive than the model RETS (i.e., if instruments have more than one channel). Can add the following words to the end of 3.2.G.2. "Exert best efforts to return the instruments to operable status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner. This is in lieu of an LER."

No.	NUREG 0473	Quad Cities	Comment
5	3.3.7.11 Action c 3.3.7.12 Action c	3.2.G.3 3.2.H.3	The portion of this action statement concerning what will be done if both the LCO and action requirements cannot be satisfied is less conservative than the model RETS. Note that the action statements are no longer required to include a time limit.
6	4.3.7.11	4.2.6	The surveillance does not include a source check.
7	Table 3.3.7.11-1 1.a	Table 3.2.5	The liquid radwaste effluent line gross activity monitor does not provide automatic termination of release. What does the plant do if this monitor alarms and where (in the tech. specs.) is this addressed?
8	2.b	---	The submittal does not include reference to a gross activity monitor on the component cooling water system effluent line.
9	3.b	---	The Submittal does not include reference to a flow rate measurement device on the discharge canal. We need more information concerning how Quad Cities measures (or estimates) this flow rate.
10	5	---	Quad Cities has no outdoor waste storage tanks. We, however, need more information concerning the possibility of the existence of any outside tanks which may contain activity (such as refueling water storage tanks, condensate storage tanks, etc.).
11	Action 110 Action 112	Action B Action A	Can remove the words "for 14 days."
12	Action 112	Action A	Can substitute "once per 12 hours" for "once per 8 hour shift."
13	Action 113	Action C	Can remove the words "for up to 30 days."
14	Action 114	---	This action statement may be necessary if there are tanks that require level indicators. See note 13.
15	---	Table 3.2-5	What blowdown is the blowdown flow rate monitor measuring? We need more information concerning Quad Cities' liquid systems.

No.	NUREG 0473	Quad Cities	Comment
16	Table 4.3.7.11-1 1.a	Table 4.2-3	Source checks are not being done prior to each release.
17	2.a		Source checks are not being done monthly.
18	2.b 3.b		The submittal does not address this monitor, so there is no surveillance requirement. Surveillance must be addressed if it is decided that the monitor is necessary.
19	3.a		A footnote equivalent to Table Notation 4 in the model RETS could be added to clarify what a channel check is and that it only has to be performed daily during periods of release.
20	Notation 1		This footnote will be required if automatic termination is added to the functions of the monitor.
21	Notation 3	Note 3	Calibrations are defined in the existing Tech. Specs. and Quad Cities feels that they are also adequately covered by established procedures. We would like to review them.
22	Notation 4	---	This footnote is not in the submittal. It may be to the plant's advantage to include it.
23	Table 3.3.7.12-1 1.a	Table 3.2-6	Quad Cities does not have this monitor. The offgas is routed to the main chimney at which point it is monitored. The main chimney monitor, however, does not provide for automatic termination of offgas release. What is done if the main chimney monitor alarms?
24	2A, 2B	---	Hydrogen and oxygen monitors are not addressed in the submittal.
25	3.d	---	A reactor building vent flow rate monitor is not included in the submittal.
26	Notation ***	---	It may be to the plant's advantage to have this footnote for the SJAE monitors.
27.	Action 121	Action D	Only one chimney monitor being operable still meets the intent of RETS.
28	Action 122 Action 123 Action 127	Action B Action A Action C	The words "for up to 30 days" can be removed.

No.	NUREG 0473	Quad Cities	Comment
29	Action 123	Action A	Specification of an LLD is not required.
30	Action 127	Action C	Should add the words "as required in Table 4.8-1."
31	Table 4.3.7.12-1 1.b, 1.c 3.b, 3.c, 3.d 4.b, 4.c 5.b, 5.c 6.b, 6.c 7.b, 7.c 8.b, 8.c 9.b, 9.c	Table 4.2-4	Surveillance of this monitor is not addressed. For monitors that Quad Cities does not have, we mean here that the monitor downstream (which is performing the functions of the given monitor) also has no stated surveillance requirement.
32	1.d, 1.e 3.e 4.d, 4.e 5.d, 5.e 6.d, 6.e 7.d, 7.e 8.d, 8.e 9.d, 9.e		Quarterly channel functional test is not specified for this monitor (or its downstream equivalent). It will be done with the calibration, but only every 18 months.
33	3.a 10.a		Source check is not specified for this monitor.
34	Notation *	Note 2	Can add the words "other than when the line is valved out and locked."
35	Notation 1	---	This notation is not addressed. It probably is because the monitor does not have automatic isolation capability.
36	3.11.1.1	3.8.B	The maximum permissible concentration for dissolved or entrained noble gases (specified in Quad Cities Table 4.8-2) exceeds the 2×10^{-4} μCi/ml total activity specified by RETS. Except for ^{87,88}Kr and ^{41}Ar, the concentration of each radionuclide specified in Table 4.8-2 equals or exceeds 2×10^{-4} μCi/ml.
37	Action	Action	Can change the word "immediately" to "without delay."
38	Table 4.11-1 A B	Table 4.8-3 A B	The LLD's proposed in the submittal (i.e., 10% of the concentrations specified in 10 CFR 20, Appendix B, Table II, Column 2) are, in some cases, not as good as those specified in the model RETS. In addition,

No.	NUREG 0473	Quad Cities	Comment
46	3.11.1.3	3.8.B.3	The way it is stated, applicability seems to be only during processing, not at all times as required by the model RETS. Must clarify this. The trigger levels of 0.13 and 0.42 mrem are appropriate for a two unit site.
47	3.11.1.3 Action a	3.8.B.4	The words "with the liquid radwaste system inoperable for more than 31 days, or" may be deleted.
48	4.11.1.3.2	4.8.B.3.b	Paragraph b in 4.8.B.3 may be deleted.
49	3.11.1.4 Action a 4.11.1.4	--- --- ---	Not addressed in the submittal.
50	3.11.2.1 3.11.2.2 3.11.2.3	3.8.A.1 3.8.A.2 3.8.A.3	The words "unrestricted areas" may be replaced with "areas at and beyond the site boundary."
51	3.11.2.1.b	3.8.A.1.b	Use the words "For iodine-131, for tritium, and for all radionuclides in particulate form with half lives greater than 8 days, less than 1500 mrem/year to any organ." This will make clear what radionuclides are being referred to.
52	Action	3.8.A.c	The word "immediately" may be replaced with "without delay."
53	Table 4.11-2 B	Table 4.8-1 A	A grab sample should be taken from the containment prior to each purge - not monthly. If this is changed, the analysis frequency should be changed to match the sampling frequency. Proper LLD's are not given. The footnote says that the LLD's will be 10% of the concentrations specified in 10 CFR 20, Appendix B, Table II, Column 2. I think they mean Column 1 (Column 2 is for liquids). In any case, some of these LLD's would not be as good as those specified in the model RETS.
54	D	B	^{133}I can be removed (charcoal sample). Must include ^{131}I for particulate sample. Typo: 1-131 should be I-131.
55	Notation b	Notation b	Quad Cities consideres only operational occurrences that can alter the mixture

No.	NUREG 0473	Quad Cities	Comment
			10 CFR 20, Appendix B, Table II, Column 2 contains no concentrations for noble gases nor gross alpha.
39	A	A	The notation "P" used in the sampling frequency for dissolved and entrained gases is not defined.
40	Notation a	Notation a	Typographical error in Notation a of Table 4-8-3: "10 CFT" should be 10 CFR.
41	Notation d	Notation d	The words "by a method described in the ODCM" may be removed. Mixing does not have to be described in the ODCM.
42	Notation f	Notation e	^{58}Co is missing from the list of radionuclides. ^{131}I is included in the list instead of being singled out in Table 4.8-3.
43	3.11.1.2	3.8.B.2.a,b	What does "the unit" mean? It probably should be "each unit." Typo?
44	3.11.1.2 3.11.2.3	3.8.B.2.a,b 3.8.A.3	The words "an individual" may be changed to a member of the public. If this change is made, then the term "a member of the public" should be defined in the definition section.
45	3.11.1.2 Action a	3.8.B.2.c	Add the following: "This is in lieu of a Licensee Event Report."
	3.11.1.3 Action a	3.8.B.4	
	3.11.2.2 Action a	3.8.A.2.c	
	3.11.2.3 Action a	3.8.A.3.c	
	3.11.2.4 Action a	3.8.A.c	
	3.11.4 Action a	3.8.A.2.d 3.8.A.3.d 4.8.B.2.d	
	3.12.1 Action a,b	3.8.D.2	
	3.12.2 Action a	3.8.E.6	

No.	NUREG 0473	Quad Cities	Comment
55 Cont.			of radionuclides. What about altering the concentration. The only problem is the 15% power change within 1 hour. An acceptable alternative would be the following: "Sampling and analysis shall also be performed following shutdown, startup, or a thermal power change exceeding 15 percent of rated thermal power within one hour unless (1) analysis shows that the dose equivalent I-131 concentration in the primary coolant has not increased more than a factor of 3 and (2) the noble gas activity monitor shows that the effluent activity has not increased by more than a factor of 3."
56	Notation d	Notation c	They have 20% power change instead of 15%. They have omitted sampling daily for 7 days following shutdown, startup, power change. The following alternative may be added to Table Notation c: "This requirement does not apply if (1) analysis shows that the dose equivalent I-131 concentration in the primary coolant has not increased more than a factor of 3 and (2) the noble gas monitor shows that the effluent activity has not increased more than a factor of 3."
57	Notation g	Notation e	^{58}Co is missing from the list of radionuclides.
58	3.11.2.3 Action a 4.11.2.3	3.8.A.3 3.8.A.3.c 4.8.B	Replace the words "radioiodines, radioactive materials in particulate form with half-lives greater than 8 days, and radionuclides other than noble gases" with "iodine 131, tritium, and all radionuclides in particulate form with half-lives greater than 8 days."
59	3.11.2.3.a 3.11.2.3.b	3.8A.3.a 3.8.A.3.b	The doses in a and b should be to any organ.
60	3.11.2.4	---	There is no LCO statement nor an applicability. Quad Cities does not have a system called the "gaseous radwaste treatment system." They merely refer to the recombiners.
61	4.11.2.4	---	Not addressed in the submittal.

No.	NUREG 0473	Quad Cities	Comment
62	3.11.2.5	3.8.A.4	The way it is stated, applicability seems to be only during processing, not at all times as required by the model RETS. The trigger level of 0.63 mrem is appropriate for a two-unit plant. Must discuss 3.8.A.4.b (i.e., the spec. not applying below 30% power).
63	Action a	---	Not addressed in the submittal.
64	3.11.2.6	3.8.A.5.a	H_2-O_2 concentration limits are not given. What is "adequate margin from an explosive hydrogen mixture concentration?'
65	Action a	---	Not addressed in the submittal.
66	4.11.2.6	4.8.A.5	Continuous monitoring of H_2 or O_2 is not included. H_2-O_2 monitors are not required to be operable.
67	3.11.2.7	---	Not addressed in the submittal.
68	3.11.2.8	---	Is the containment Mark I or II? If so, this spec. is required.
69	3.11.3	3.8.E.1	Can replace the words "for solidification and . . . from the site" with "to process wet radioactive wastes to meet shipping and burial ground requirements."
70	Action a	3.8.E.2	Section 3.8.E.2 may be replaced with the following: "with the provisions of the Process Control Program not satisfied, suspend shipments of defectively processed or defectively packaged solid radioactive waste from the site."
71	Action b	3.8.E.3	Section 3.8.E.3 may be deleted.
72	4.11.3.1	4.8.E.1	Section 4.8.E.1 may be deleted.
73	3.11.4	---	There is no LCO statement, nor an applicability.
74	3.12.1 Action c	3.8.D.4	The unavailability of leafy vegetable samples is not addressed. Can replace 3.8.D.4 with the following. This will eliminate the need for a special report. "with milk or fresh leafy vegetable samples unavailable from one or more of the sample locations required by Table 4.8-4, identify locations for obtaining replacement samples and add them to the radiological environmental

No.	NUREG 0473	Quad Cities	Comment
74 cont.			monitoring program within 30 days." The locations from which samples were unavailable may than be deleted from the monitoring program. In lieu of a Licensee Event Report and pursuant to Specification 6.6.B.1, identify the cause of the unavailability of samples and identify the new location(s) for obtaining replacement samples in the next Semiannual Radioactive Effluent Release report and also include in the report a revised figure(s) and table for the ODCM reflecting the new location(s).
75	4.12.1	4.8.D.2	Can add the following to 4.8.D.2: "and the guidance of the Radiological Assessment Branch Technical Position on Environmental Monitoring."
76	Table 3.12-1	Table 4.8-4	The collection site locations should be put in the ODCM. The tech. specs. contain only location number or general descriptions of the locations.
77	1	1	Sampling and analysis frequency for ^{131}I should be weekly instead of bi-weekly. Gross beta is required only quarterly, not weekly. Gamma isotopic is required if gross beta is > 10 (not 5) times ave. conc. It may be to the plant's advantage to say that gross beta will be done $\geq$ 24 hours following filter change.
78	2	2	A nomial 40 TLD locations are required. Quad Cities must justify having only 16.
79	3.a	6	Weekly grab samples are being proposed instead of the composite of aliquots taken at intervals not exceeding 2 hours. Gross beta analysis is proposed instead of gamma isotopic on each monthly composite. Tritium analyses of quarterly composites is not included.
80	3.b	---	Ground water sampling is not included in the submittal. Quad Cities must justify this.

No.	NUREG 0473	Quad Cities	Comment
81	3.c	5	One control location should be sampled. Gross beta analysis of each monthly composite, tritium analysis of quarterly composite, and I-131 analysis of composites collected over a period of $\leq$ 14 days, are not included in the submittal.
82	4.a	4	Only 2 (rather than 4 as in the model RETS) milk sampling locations are being proposed. Gamma isotopic analysis is not included.
83	4.b	3	Only 1 (rather than 2 as in the model RETS) fish sampling location is being proposed.
84	4.c	---	Food product sampling is not included in this submittal. Table 4.8-5, however, gives LLD's for vegetation.
85	Table 3.12-2	Table 4.8-4 Footnote **	Typo: H-32 x 10^4 should be H-3 2 x 10^4. Reporting level for ^{59}Fe could be 4 x 10^2 pCi/l for water rather than 1 x 10^2 pCi/l. Similarly, ^{58}Co could be 1 x 10^3 rather than 6 x 10^2; ^{60}Co could be 3 x 10^2 rather than 2 x 10^2; ^{65}Zn could be 3 x 10^2 rather than 2 x 10^2; ^{131}I could be 2 rather than 1; ^{140}Ba-^{140}La could be 2 x 10^2 rather than 1 x 10^2 If food products will be sampled, reporting levels should be given. Reporting levels are not given for cooling water samples. The submittal states that the reporting levels are for average concentration over a calendar quarter; the model RETS reporting levels are for individual samples.
86	Table 4.12-1	Table 4.8-5	Typo 1-131 should be I-131. LLD for ^{131}I in drinking water should be 1 pCi/l; the submittal proposed 5 pCi/l. The LLD's listed for ^{134,137}Cs in food products are not as good (by about a factor of 3) as those in the model RETS. All the other LLD's listed are appropriately (within

No.	NUREG 0473	Quad Cities	Comment
86 cont.			about 20%) equal to or better than those in the model RETS. The proposed LLD for ^{3}H in liquids is 0.2 pCi/l while the model RETS requires only 2000 pCi/l. What radionuclides are included in the gamma isotopic? It may be to the plant's advantage to state which ones will have the stated LLD's, otherwise it could be interpreted as all gamma-emitting radionuclides.
87	Notation a	Notation a	All LLD's are a priori - not just those for environmental samples. It would be to the plant's advantage to state this. The term S_b/t in the submittal is equivalent to the term S_b in the model RETS. The last paragraph of this footnote (i.e., the one beginning "The value of S_b used . . .") may be deleted.
88	Notation b	---	The submittal does not have this footnote. Although it is not really required, the plant may want to put it in - otherwise, their ^{131}I LLD would apply to all water samples.
89	3.12.2	3.8.D.5	The land use census should include the nearest garden of >500 ft^2 producing fresh leafy vegetables in each sector within 5 miles, or broad leaf vegetable sampling may be performed at the site boundary in the direction of the highest X/Q, or Quad Cities should justify why neither is being proposed. Basis statement 3.8/4.8.A.1 says that the main chimney is considered to be an elevated release point, so all milk animals and all gardens >500 ft^2 producing fresh leafy vegetables in each of the 16 sectors within a distance of 3 miles should be included.
90	Action a	3.8.D.6	The special report in section 3.8.E.6 is no longer required. This action may not be satisfied by reporting the required information in the next Semiannual Radioactive Effluent Release Report.

No.	NUREG 0473	Quad Cities	Comment
91	Action b	3.8.D.6	The action statement meets the intent of RETS, but it is more restricitive than the model RETS. The new sampling location must be added to the environmental program only if the calculated dose is 20% greater than at the existing sampling location In lieu of an LER, the new location(s) should be identified in the next Semiannual Radioactive Effluent Release Report. Are the 40 CFR 190 dose models in the ODCM?
92	4.12.3	4.8.D.6	The surveillance statement should say that this will be done in accordance with the ODCM.
93	Bases	Bases	The following comments (83-90) refer to parts of the bases statements in the model RETS that are not included in the submittal. Although the bases are not enforceable, it may be in the best interests of the utility to include some (or all) of these missing parts.
94	6.5.1.6.K 6.5.1.6.1	--- ---	Not addressed in the submittal.
95	6.5.2.8.1	6.1.?.b.9	The submittal proposes auditing the radiological environmental monitoring program every 24 months while the model RETS require this every 12 months.
96	6.5.2.8.n	6.1.?.b.11	Auditing the PCP and implementing procedures is required only every 24 months. The submittal states every 20 months which is more conservative than the model RETS.
97	6.5.2.8.0	6.1.?.b.4	The QA audit will be of activities required to meet the criteria of Appendix B, 10 CFR 50 while the model RETS says Reg. Guidc 4.15.
98	6.8.1.i 6.9.1.12.K 6.10.2	--- --- ---	Not addressed in the submittal.
99	6.9.1.7	6.6.c.2.a-h	Subsections b, e, and g in section 6.6.C.2 should be in the Semiannual Radioactive Effluent Release Report, not in the Annual Radiological Environmental Operating Report. A

No.	NUREG 0473	Quad Cities	Comment
99 cont.			comparison with preoperational studies should be included together with an analysis of the problem and planned solution if harmful effects or evidence of irreversible damage are detected.
100	6.9.1.9	6.6.C.1	Paragraphs 2-5 of this spec. in the model RETS are not addressed in the submittal.
101	6.9.1.10 6.15.1	6.6.A.3 6.9.A	Major changes to the radioactive waste treatment systems may be reported in the Semiannual report rather than in the monthly report.
102	6.15.1	6.9 A	Paragraph e of the model RETS is not included in the submittal.
103	---	3.8.G	Section 3.8.G states that if the LCO and/or associated action requirements identified in sections 3.8.a through 3.8.E and 4.8.A through 4.8.E cannot be satisfied, no changes are required in the operational condition of the plant (i.e., shutdown is not required). Sections 3.8.A.1 and 3.8.B.1, however, should not be included because they address 10 CFR 20 limits. Section 3.8.G should be applied to sections to sections 3.8.A.2 through 3.8.A.6, 3.8.B.2 through 3.8.B.4, 3.8.C through 3.8.E, 4.8.A.2 through 4.8.A.6, 4.8.B.2 through 4.8.B.4, and 4.8.C through 4.8.E.

ATTACHMENT 2

Item No.	Response
1	The existing definitions of instrument calibration and instrument check will be included in our next RETS submittal. These definitions have remained unchanged since the initial issue of the Tech Specs over 10 years ago.
2	The definition of a source check has been revised to be consistent with that in the Model RETS.
3	Sections 3.2.G.1 and 3.2.H.1. have been revised to reflect these recommended changes.
4	Sections 3.2.G.2. and 3.2.H.2. have been revised to show the addition of the recommended sentences.
5	Proposed sections 3.2.G.3. and 3.2.H.3. basically say the same thing as the present edition (Rev. 2) of the Model RETS. The wording given in our submittal is taken from an earlier version of the Model RETS, and this was deemed acceptable by the NRC during the review meetings which took place in 1978 and 1979. It is felt that although the words are different, these sections meet the intent of the Model RETS, as well as require a 30-day LER to document operation in a degraded mode.
6	A source check is to be provided in Specification 4.2.G.
7	The operator actions taken upon receiving the high radiation alarm from the liquid radwaste effluent monitor are specified in the Station Abnormal Operating Procedures (QOA) Manual. There is no need, nor has precident been set, for stating operator responses to alarms in the Tech Specs. The operator actions basically consist of verifying that the discharge rate is commensurate with the activity of the radwaste tank being discharged, checking the monitor response on the panel, and verifying operability of the composite sampler if the monitor is defective. Due to the redundant administrative and procedural checks involved with verifying proper radwaste discharge, we would not expect to rely on this monitor to surprise the Control Room Operator with a high radiation alarm during radwaste discharges. Also, discharge of liquid radwaste is from only one tank, which is appropriately sampled prior to discharge.
8	The activity monitor on the Reactor Building Closed Cooling Water (RBCCW) System is not included in the submittal, as it is not monitoring a release pathway. The RBCCW System is a closed system within the reactor building, and is not subject for being included in the RETS. Further, the NRC was informed concerning this system during the 1978-1979 discussions, and the omission from the RETS was agreed upon.

ATTACHMENT 2 (cont'd)

Item No.	Response
9	Our submittal will be changed to specify that the Blowdown Flow Rate Monitor is for the spray canal discharge blowdown to the Mississippi River.
10	The Station utilizes two contaminated condensate storage tanks, which are the only outside tanks which contain activity. These tanks are not construed to be radwaste holdup or storage tanks, but are simply storage tanks for process water to be used for makeup to the normal condensate-feedwater system, suction for the Control Rod Drive (CRD) feed pumps, suction for ECCS (normal water supply to Core Spray and LPCI), makeup water to the fuel storage pool, and for condensate transfer water used in fill systems. Since the condensate storage tanks are not considered radwaste storage tanks for receiving additions of radioactive materials, holdup, and discharge, their level indicating devices are not necessary to be included in Table 3.2-5.
11	The submittal will be revised to remove these words.
12	The submittal will be revised to make this substitution.
13	These words will be removed in the submittal.
14	Since no liquid radwaste holdup tanks are proposed to be included in the RETS, this action statement is not necessary.
15	Table 3.2-5 will be revised to specify the Spray Canal Discharge Blowdown Flow Rate Monitor.
16	Performing a source check prior to each discharge via the liquid radwaste effluent line is a senseless evolution which would accomplish nothing to benefit the operability of the effluent monitor. This task would also cause undue delays in the discharge process and would not be in the best interest of ALARA. It also appears questionable that a source check would be needed, since the radwaste effluent itself will provide an instrument response during a discharge.
17	A source check will be included in Table 4.2-3 for the service water effluent monitor to be performed every 18 months in concurrence with the calibration. A more frequent source check is not warranted. The monitor is encased in a shielded cubicle that is not easily disassembled to permit a source check. A monthly source check would be time-consuming and difficult to perform.

Item No.	Response
18	The RBCCW monitor is not applicable to the RETS (see response to item no. 8). The spray canal discharge blowdown flow rate monitor is addressed in Table 4.2-3.
19	This footnote is being added to Table 4.2-3.
20	This footnote is not necessary as this monitor does not provide for automatic termination of release.
21	Notation 3 in Table 4.3.7.11-1 of the Model RETS states in the last sentence that operating plants may use established calibration procedures for calibration. We interpret this to mean that the words in Notation 3 are not necessary. A copy of the existing calibration procedures for our liquid radwaste and service water effluent monitors is provided as Attachment 3.
22	This footnote is being added to Table 4.2-3 of our submittal.
23	Although the main chimney monitors do not provide for automatic termination of release, the upstream SJAE activity monitors do provide for automatic release termination on high activity. This feature is appropriately verified as part of the functional test surveillance procedure. The annunciator procedures for the main chimney monitors direct to operator check the SJAE and chimney monitors, verify that the off-gas loop seals are filled, and to shutdown the contributing unit.
24	Oxygen monitors do not exist. The off-gas system hydrogen monitors have never worked properly and never will. Countless maintenance, technical, and operating department man-hours have been spent to enhance their operability, and the results have been futile. It is our practice to eliminate the possibility of hydrogen-oxygen detonations by operating the off-gas system as it was designed. Section 3.8.A.5 of our submittal provides assurance that hydrogen concentrations are limited. Section 4.8.A.5 provides surveillance of this parameter. We have stood by our reactor power vs. recombiner outlet temperature plot method of surveillance for many years, and feel that it meets the intent of the model RETS. The NRC has reviewed our off-gas system operation and design, and concurs with our policies, procedures, and component design configuration. As a result of this review, we did have to perform hardware and procedural modifications; none of which involved the use of hydrogen monitors. We have examined the feasibility of replacement monitors, and none exist that have a proven reliability record; and the cost-benefit of such a change would be trivial.

ATTACHMENT 2 (cont'd)

Item No.	Response
25	The Station has installed a reactor building ventilation stack flow rate monitor, but it has not been proven operable, and its indications have been false. The need to have such a monitor in the Tech Specs is questionable. Effluent releases via this pathway are appropriately monitored for activity and sampled for iodine and particulates. Also, this release path is isolated when the activity monitors reach 2mr/hr. Incorporating this flow rate monitor in the RETS will cost the Station many dollars and man-hours to make the monitor operable and indicate consistently correct.
26	This item is already covered in Note (1) of Table 3.2-6 of our submittal.
27	This item is being corrected in Action D of Table 3.2-6 in our submittal.
28	These words are being removed in our submittal.
29	The LLD number is being deleted from our submittal.
30	These words are being added to Action C in our submittal.
31	The following of the listed Model RETS Table 4.3.7.12-1 items do not exist: 1b,1c (Main Condenser Off Gas Treatment Monitoring System) 5b,5c (Turbine Building Ventilation Monitoring System) 6b,6c (Auxiliary Building Ventilation Monitoring System) 7b,7c (Fuel Stoarge Area Ventilation Monitoring System) 8b,8c (Radwaste Area Ventilation Monitoring System) 9b,9c (Turbine Gland Seal Condenser Vent and Mechanical Vacuum Pump Exhaust Monitoring System) Quad-Cities Station does not have an Auxiliary Building. Item 7b,7c is monitored downstream by the Reactor Building Ventilation Exhaust Monitoring System. Items 1b & c, 5b & c, 8b & c, and 9b & c are monitored downstream by the Main Chimney Monitoring System. Item 3d of Table 4.3.7.12-1 of the Model RETS is not included as explained in our response to Item 25. Items 3b & c and 4b & c are not included in our submittal in Table 4.2-4 because it seems questionable to do an instrument check on iodine and particulate samplers. There are not "instruments," as defined in our Tech Specs. It appears senseless to verify weekly that an iodine and particulate sampler are still "there".
32	As described above, Model RETS Table 4.3.7.12-1 Items 1d & e, 5d & e, 6d & e, 7d & e, 8d & e, and 9d & e either do not exist, or belong to systems ultimately monitored by the reactor building vent stack and the main chimney monitoring systems. Our submittal is being changed to include quarterly functional tests to cover items 3e, 4d, and 4e.

Item No.	Response
33	Our submittal is altered to include source checks on the reactor building ventilation exhaust activity monitor and the SJAE activity monitor. These checks are specified at the frequency consistent with present practices and requirements.
34	These words do not go along with the SJAE system configuration, and will not be added. No. 2 of Table 4.2-4 in our submittal is satisfactory the way it reads now.
35	The monitor does not have automatic isolation on these conditions, and the notation is not addressed.
*36	Section 3.8.B.1. of our submittal is to be changed to specify an MPC for dissolved or entrained noble gases to be 2×10^{-4} uci/m. total activity. Table 4.8-2 of our submittal is being deleted. The nomenclature of the successive tables is also changed to make the numbering proper.
37	Sections 3.8.A.1.c. and 3.8.B.1. have been revised to reflect this recommended change.
*38	Table 4.8-3 is revised to show LLD Values consistent with those in the Model RETS. Notation a for Table 4.8-3 is also revised to reflect this change.
39	This notation is eliminated and the words "prior to" are inserted to explain this item.
40	This typographical error will not exist since the sentence is being deleted per item 38.
41	These words have been removed from the notation.
42	Co-58 is added to the list of radionuclides. I-131 will be included in the table instead of in the notation list.
43	The words "each unit" have been substituted for "the unit" in our submittal.
44	We choose to leave these words as they are. There is no need to change them and add another definition to the Tech Specs.
45	These words have been added to the sections noted.
46	The wording of this section has been carefully chosen so as to maximize the meaningfulness of this specification. The NRC was confronted with our words back in 1978-1979, and they understood our intentions and basically concurred with our reasoning. The Model RETS implies that the entire radwaste system must be operable at all times, and does not allow for maintenance or modifications related to its components. Our submittal is worded to be more flexible and realistic. The dose levels are appropriate for a 2-unit site because we are a 2-unit site which shares a common radwaste system.

* This response is undergoing CECo review and may change.

Item No.	Response
47	These words are being deleted from section 3.8.B.4 of our submittal.
48	This paragraph is being deleted from section 4.8.B.3.b.
49	As explained in our response to Item 10, we do not have any outdoor liquid radwaste holdup tanks.
*50	This change is being made to sections 3.8.A.1, 3.8.A.2, and 3.8.A.3 of our submittal.
51	This sentence has been changed to be in conformance with that in the comment. It is agreed that the sentence is more clear and concise.
52	This substitution has been made in our submittal.
*53	Containment purging at Quad-Cities is accomplished via the reactor building ventilation system to the vent stack, or via the SBGTS to the main chimney. Both of these release points are appropriately monitored and sampled per our submittal. We have a procedural requirement that prior to venting the drywell or suppression chamber, an atmospheric sample is obtained and a release rate estimated. This sample is effective for 24 hours unless a reactor scram or other occurrence which could alter primary containmnet activity causes a significant increase in the continuous air monitor reading. Table 4.8-1 of our submittal is revised to contain LLD values consistent with those in the Model RETS. Notation a for this table is also revised.
54	I-133 is removed, and the particulate sample now includes I-131. The typographical error is also corrected.
55	The acceptable alternative given in the comment is being placed in this notation.
56	The recommended alternative in the comment is incorporated into this notation.
57	Co-58 is added to the list of radionuclides.
58	The recommended wording is changed in sections 3.8.A.3, 3.8.A.3.c., and 4.8.A.3. in our submittal as per the comment.
59	The words "to any organ" are added to sections 3.8.A.3.a. and 3.8.A.3.b of our submittal.

* This response is undergoing CECo review and may change.

ATTACHMENT 2 (cont'd)

Item No.	Response
60	Quad-Cities does have a gaseous radwaste treatment system, but it is referred to in our submittal by its commonplace nomenclature, Off-Gas System. It is addressed in sections 3.8.A.4 and 3.8.A.6 of our submittal. Persuant to Model RETS section 3.11.2.5., Quad-Cities does not have a ventilation exhaust treatment system.
61	This item is not addressed because including it would increase the possibility of having an off-gas explosion. The off-gas system consists of 2 redundant catylitic recombiner trains. If we must operate both trains, one each during every 92 days, this would necessitate changing over recombiner trains. This would require a unit shutdown. If we would attempt this evolution with the unit in operation, there is a high risk of an off-gas explosion. In 1979, we made this known to the NRC and they wholeheartedly concurred with this. Further, since specification 4.8.B.3.b. is being deleted as per item 48, there is no sense to include an operability requirement in section 4.8.A.4 of our submittal.
62	The off-gas system does not run when there are not any non-condensible gases from the main concenser to process (i.e. during reactor shutdown). Thus, operability is only required when the system is in fact processing for gaseous discharge. Quad-Cities is a 2-unit plant. The 30% power specification relates to the charcoal absorbers, which are part of the off-gas system. Normally, the SJAE and recombiner are placed in-service between 100 psig and 900 psig reactor pressure during a unit startup. However, the charcoal absorber beds are not valved-in until 30% reactor power, per system design operation and Station procedures.
63	Inoperability of the off-gas system is addressed in section 3.8.A.6 of our submittal.
64	Hydrogen and Oxygen concentrations are not specified for the reasons described in our response to item 24. The words "adequate margin from an explosive hydrogen mixture concentration" were descriptive in nature, and served to simply explain the prior wording. These words have been deleted from our submittal.
65	The inoperability of the recombiner (within the allowable band on the base-line plot of recombiner outlet temperature vs. reactor power) is addressed in specifications 3.8.5.b. and 3.8.6.
66	See response to items 24 and 64. We cannot require hydrogen monitors to be operable if they are continuously inoperable. Oxygen monitors do not exist.

Item No.	Response
67	This item has been previously discussed with the NRC. We still need to know which summation of radionuclides (6,22, or other) is applicable to this specification. In spite of this, it is our position that this entire specification is not necessary. This is because the RETS should be only concerned with final release points. The SJAE off-gas holdup radiation monitors do not consititute a final release point for the main condenser off-gas. Also, this specification would unnecessarily limit unit operation.
68	Quad Cities is a Mark I containment plant, but it is interpreted that this specification is still optional. Furthermore, we cannot operate by limiting containment venting and purging through only SBGTS. If the containment activity levels are low (which is usually the case) we normally utilize the reactor building ventilation exhaust. Further, SBGTS is an emergency system and should not need to be used every time the containment is needed to be vented or purged. Venting and purging have been an ongoing issue involving the NRC and licensees for over 3 years. Although the NRC's LOCA concerns have for the most part been satisfied, the topic of venting and purging is still being debated (questions, requests for information, and justifications etc.) to a degree that overshadows the RETS issue. Resolution of this item should be separate from the RETS.
69	These words are changed in our RETS submitted as suggested.
70	These words are changed in our RETS submitted as suggested.
71	This section is deleted in our submittal.
72	This section is deleted in our submittal.
73	This item is addressed in sections 3.8.A.2.d., 3.8.A.3.d., 3.8.B.2.d. of our submittal. These sections were discussed with the NRC in 1978-1979 and no adverse comments were given as to how this item was included in our Tech Specs.
74	The suggested wording has been incorporated in section 3.8.D.4. of our submittal, with the deletion of the reference to leafy vegetables because this was previously agreed to by the NRC. Changes to the program will be reported in the annual report per section 6.6.C.2.

ATTACHMENT 2 (cont'd)

Item No.	Response
75	The NRC staff guidance goes far beyond our requirements, we are not proposing any change.
76	This item is covered in the revised table.
77	The NRC has previously agreed to the current wording.
78	Forty TLD locations have been provided.
79-83	The NRC has previously agreed to the current wording in these sections.
84	The LLD for vegetation may be deleted. The NRC requested that we use their table which includes this item.
85	Comments have been incorporated in the submittal.
86	The I-131 typo has been corrected. NRC has previously agreed to the LLD's used. The correct units for H-3 LLD in liquids is 0.2 pci/ml. The LLD value for gamma isotopics is for any radionuclide.
*87	This response will be provided later.
88	This footnote has been added.
89	A land use census for gardens is not performed because the garden is assumed to be present.
90	The suggested change has been incorporated in the submittal.
91	Leave as previously stated. The 40 CFR 190 models are in the ODCM.

* Response to be provided with other * items.

Item No.	Response
92	This item is added to section 4.8.D of our submittal.
93	It is our intent to leave the bases as they are presently stated. They have been reviewed to be satisfactory.
94	These items are added on page 6.1-5 of our submittal.
95	This audit interval is revised on page 6.1-2 of our submittal.
96	This audit interval is revised on page 6.1-2 of our submittal.
97	Per the Commonwealth Edison Company Quality Assurance Program Topical Report CE-1-A, we are committed to 10 CFR 50 Appendix B, and not to Regulatory Guide 4.15.
98	Since we are not committed to Regulatory Guide 4.15, section 6.8.1.i of the Model RETS is not applicable. Section 6.9.12.K of the Model RETS is also not applicable because we do not have outdoor liquid radwaste storage tanks. Item 6.10.2. is addressed in section 6.5.B (page 6.5-1) of our existing Tech Specs.
99	Previously agreed to by the NRC. The requested comparison is not applicable to a long term operating plant like Quad-Cities Station. The requested analysis cannot be performed by the environmental monitoring program.
100	These items are addressed in Section 6.6.C.2.
99-100	These items are being resolved by TSN.
101	It is more advantageous for us to report these changes in the monthly report, and we desire to leave this reporting requirement as-is.
102	It is felt that item 6.15.1.e. of the Model RETS is an unnecessary burden to this specification. This evaluation will be difficult to perform and will not encourage needed changes to our various radwaste systems. Item 6.9.A.1.f. of our submittal (basically an ALARA review) is of far more benefit to us than item 6.15.1.e. of the Model RETS.
103	This section has also been previously reviewed with the NRC in 1978-1979 and no disagreement was apparent at that time. Including sections 3.8.A.1. and 3.8.B.1. is appropriate because they say to decrease the release rate to restore the effluent concentrations to be within limits; not to shut the plant down. Exceeding 10 CFR 20 limits is no cause to shut the plant down, although it is recognized that a unit shutdown may be necessary to accomplish the release reduction. It is strongly felt that the words in section 3.8.G are proper, appropriate, and consistent with the intent of the Model RETS.