

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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| In the Matter of |) | |
| |) | |
| COMMONWEALTH EDISON CO., |) | Docket Nos. STN |
| |) | |
| Byron Station |) | 50-454 and 50-455 |
| |) | |
| (Units No. 1 and No. 2) |) | <u>Operating License</u> |

LEAGUE OF WOMEN VOTERS OF ROCKFORD, ILLINOIS'
FIRST INTERROGATORIES TO THE NRC STAFF

Pursuant to 10 C.F.R. Sec. 2.720(h)(ii), the League of Women Voters of Rockford, Illinois ("League") hereby submits to the Presiding Officer of the above-captioned proceedings written Interrogatories to be answered by NRC personnel with knowledge of the facts as designated by the NRC Executive Director for Operations. The League believes that answers to these Interrogatories are necessary to a proper decision in these proceedings and that answers to these Interrogatories are not reasonably obtainable from any other source. Consequently, the League respectfully requests that the Presiding Officer so find and therefore require that the Staff answer the herein submitted Interrogatories in as brief a period as possible in keeping with the expedited discovery schedule in effect in these proceedings, preferably prior to November 15, 1982.

I

DEFINITIONS AND INSTRUCTIONS

The following definitions and instructions shall be used and applied by you in connection with your answer to these Interrogatories.

1. "Communication" shall mean and include all "documents" as hereinafter defined and all written, oral, telephonic or other inquiries, discussions, conversations, negotiations, agreements, understandings, meetings, letters, notes, telegrams, advertisements, press releases, publicity releases, trade releases, and interviews.

2. As used herein, "document" includes, but is not limited to, written "communication" (as defined), in any form, papers, photographs, films, recordings, memoranda, books, records, accounts, communications, writings, letters, telegrams, mailgrams, correspondence, notes of meetings or of conversations or of phone calls, interoffice memoranda or written communications of any nature, recordings of conversations either in writing or upon any mechanical or electronic or electrical recording devices, notes, accountant's statements or summaries, budgets, exhibits, appraisals, work papers, reports, projects, tabulations, purchase orders, invoices, canceled checks or check stubs, receipts, studies, surveys, legal opinions, affidavits, interrogatories, legal briefs, legal motions, judgments, complaints, legal complaints, answers, legal answers, counterclaims, vouchers, minutes of meetings, designs, drawings, plans, manuals, notebooks, worksheets, contracts, agreements, letter agreements, bills of lading, warehouse receipts, timesheets, promissory notes, diaries, desk calendars, circulars, charts, logs, ledgers, schedules, transcripts, news releases, advertisements, press books, advertising materials, publicity releases, trade releases, press releases, teletype messages, licenses, permits, financial statements, appointment books, payment records, stenographers' notebooks, punchcards and computer printout sheets, computer data, telecopier transmissions, articles of incorporation, articles of association, by-laws, rules, expense records, criteria, regulations, directives, hotel charges, stock

transfer books, proposals, prospectuses, offers, orders, logs, objections, brochures, films, pictures, video tapes, video cassettes, inquiries, contracts, evaluations, promotional material, production and sales or license material, whether formal or informal; and all drafts, revisions, and differing versions (whether formal or informal) of any of the foregoing, and also all copies of any of the foregoing which differ in any way (including handwritten notations or other written or printed matter of any nature) from the original.

3. The term "relate to" or "relating to" shall mean: consist of, refer to, reflect or be in any way logically or factually connected with the matter discussed.

4. The words "and" and "or" shall be read herein in the conjunctive or disjunctive or both, as the case may be, all to the end that the interrogatories be applied which results in the more expansive answer.

5. If you claim privilege regarding (or advance any reason or objection for not providing) any information requested herein, please set forth with particularity all underlying reasons therefor, and identify and maintain all related documents and communications for possible inspection and/or ruling by a Licensing Board or Court.

II

INTERROGATORIES

Interrogatory No. 1

Concerning Content. on 1A:

- (a) identify all internal Staff documents concerned with the Staff's evaluation of Commonwealth Edison Company's ("CECO") QA/QC procedures from January 1, 1979 to the present at CECO's Byron Plant ("Byron"), specifically including all documents relating to the Commission's review under 10 C.F.R. Sec. 2.206 of Director Harold R. Denton's partial denial of the League's Petition on October 22, 1980;

- (b) as regards the Enclosure to the March 9, 1981 Memorandum of William J. Direks, state in detail all information referred to in paragraph 1.b regarding the quantity and type of QA/QC deficiencies in other Region III plants and the comparisons of quantity and quality of deficiencies at those plants with the deficiencies which have been found at CECO's Byron plant; state with specificity the cause of the "extensive rework" at Byron which was referred to in paragraph 2.a of the Enclosure and indicate the reason for the Staff's position, that there has been and will be sufficient control over the quality of that rework;
- (c) indicate whether the NRC I and E inspectors rely upon actual personal inspections of Byron structures, equipment, and components during their inspections, or whether they rely upon QA/QC documents furnished by CECO and CECO's vendors, or whether the inspectors rely on combination of both types of information for their inspection reports;
 - (i) if both types of information are used, indicate the approximate percentage of each type used;
 - (ii) if anything but personal inspections are relied upon, indicate why this method is sufficient to guarantee adequate quality assurance and quality control at Byron;
- (d) state in detail the Staff's position regarding the safety of licensing Byron in light of recognition by NRC Chairman Palladino and NRC Director of Operations Direks in testimony before Congress on November 19, 1981 that I & E does not and cannot unearth all QA/QC violations, including major violations, as confirmed by the proceedings regarding CECO's La Salle plant and the continuing QA/QC problems at Byron;
- (e) state in detail the Staff's position regarding the safety of licensing Byron even though the Byron SER does not address the questions of design and construction and QA program compliance and provides only a cursory review of the proposed Byron operating program.
- (f) identify all documents relied upon in or relating to your answers to Interrogatory No. 1.

Interrogatory No. 2

Concerning Contention 8:

- (a) has or will the Staff require or recommend that CECO compile a list of important to safety equipment and components at Byron, as the term "important to safety" has been defined in the November 20, 1981 Memorandum of Harold R. Denton, "Standard Definitions for Commonly Used Classification Terms," and explain your answer in detail;
- (b) if a list of important to safety equipment has been or will be recommended or required, state with specificity the criteria used or to be used to evaluate the equipment to be placed on the list;
- (c) indicate how equipment on the important to safety equipment list differs or will differ from safety related equipment;
- (d) indicate whether a Probabilistic Risk Assessment ("PRA") or any other similar study will be required or recommended by the Staff to confirm the list of important to safety equipment, or for any other reason, at Byron, and indicate the reason for your answers;
- (e) indicate whether:
 - (i) a Byron site-specific PRA would be useful for the safe operation of the Byron plant;
 - (ii) a Byron site-specific PRA would be necessary for the safe operation of the Byron plant;
 - (iii) a Byron-specific PRA would be useful to understand large accidents and their mitigation (including emergency preparedness) at Byron, and explain your answers in detail;
- (f) state with specificity the Staff's position on the safety of licensing the Byron plant where the only PRA which exists is an extrapolation from a generic study contained in WASH 1400 and NUREG-0715, especially where doubt has been cast on the validity of the findings of WASH 1400.
- (g) identify all documents relied upon in or relating to your answers to Interrogatory No. 2.

Interrogatory No. 3

Concerning Contention 19:

- (a) indicate whether you agree that a Byron site-specific accident consequence model would
 - (i) be useful in planning a Byron on-site or off-site emergency evacuation;
 - (ii) be necessary in planning a Byron on-site or off-site emergency evacuation;
- (b) if your answer to either (i) or (ii) is yes, indicate whether the Staff will recommend or require or has recommended or required that CECO construct and use at Byron such an accident consequence model and explain the reasons for your answer in detail.
- (c) indicate when the Staff anticipates CECO's on-site and off-site (including EPZ) emergency planning, including agreement with the necessary states and state agencies as well as the completion and evaluation of a full drill, will be completed;
- (d) identify all documents relied upon in or relating to your answers to Interrogatory No. 3.

Interrogatory No. 4

Concerning Contention 22:

- (a) state in detail the Staff's position on the safety of licensing the Byron plant with Westinghouse steam generators, given the problems with Westinghouse steam generators which have been detailed in NUREG-0886 and which indicate that Westinghouse steam generators are still having problems despite AVT control and design changes, and also given the fact that William J. Dircks in his attachment to Memo, SECY-82-72 entitled "Steam Generator Status Report," February, 1982, has indicated that there are "no simple corrective actions" and that major design changes are required and that inadequate analyses of the consequences of tube failures have been done;
- (b) state in detail the Staff's position regarding the safety of licensing the Byron plant, which is equipped with Westinghouse steam generators, in light of the newly recognized problem of flow-induced vibration in these generators' preheater section, which problem remains unresolved to date;

- (c) state whether you agree that the steam-generator-related position presented in the Director's decision concerning Byron under 10 C.F.R. Sec. 2.206 by Harold R. Denton, filed May 7, 1981, at pages 6-8 has been proved unfounded by the accident which occurred in early 1982 at the Niagara Mohawk Ginna plant despite the incorporation of suggested design and other changes, and especially in light of the statements of James Toscas of CECO (who has conceded that an accident similar to the one at Ginna could occur at Byron), and explain your answers in detail;
- (d) indicate the Staff's position on the overall level of safety and advisability of licensing the Byron plant given the completely unresolved nature of Task A-3 of NUREG 0410;
- (e) identify any reports available to the Staff concerning results of generic studies of steam generator problems conducted by or for CECO, EPRI, the NRC, National Laboratories, other utility groups, consultants, or any other entity, group or individual, and if such reports contain recommendations for changes or provisions that could be implemented at the Byron Plant, provide a description of the Staff's evaluation of such recommendations and whether or not they have been or are being or will be required or recommended to be implemented at Byron and indicate with specificity the reasons for the Staff's evaluation and for the Staff's position concerning implementing any such recommendations at Byron;
- (f) provide detailed information concerning the Staff's evaluation of the potential cracking problem of steam generators as described in NRC Information Notice 82-37, dated September 16, 1982, as it may apply to the Byron steam generators, and if this problem is applicable to Byron, describe in detail the corrective actions, if any, which the Staff has or will require or recommend to be taken by CECO, or if no corrective actions are planned, describe in detail the reasons for the Staff's position on this problem;
- (g) identify all documents relied upon or relating to your answers to Interrogatory No. 4.

Interrogatory No. 5

Concerning Contention 28:

- (a) state whether any Byron-specific PRA or similar study, including but not limited to failure modes and effects analyses, systems interaction analyses, and dependency analyses, and utilizing or not utilizing a list of important to safety equipment, will be required or recommended by the Staff to be performed by CECO to identify potential adverse systems interactions at Byron;

- (i) if not, describe in detail the reasons why no such study will be required,
 - (ii) if no dependency analysis has been done, state with specificity what assurance there is, if any, that common cause failure will not impact upon more than one redundant safety system or function;
 - (iii) if no important to safety equipment list will be required to be compiled, indicate in detail how the Staff proposes to conduct a "prudent consideration of interaction of systems identified as important to safety with nonsafety systems" in order to provide a "substantive review" of the safety aspects of systems interactions as referred to in the Director's decision concerning Byron under 10 C.F.R. Sec. 2.206, by Harold R. Denton, filed May 7, 1981, at page 6, paragraph 2;
- (b) given the unresolved nature of the systems interaction problem as conceded in the Byron SER at C-13 to C-14 regarding Task A-47 and the continuing attempt to establish proper guidelines to deal with the problem, indicate in detail the expected date of resolution, and how the resolution would apply to Byron, specifically indicating its application concerning "backfitting" at Byron if a resolution occurs after a Byron operating license is granted and indicating in detail why the Staff feels it would (or would not, as the case may be) be safe to issue an operating license to Byron under these circumstances;
- (c) if no study as described in part (a) above has been done, state
- (i) whether the Staff believes a Byron-specific PRA or similar study as detailed in part (a) of this Interrogatory would be useful in the safety evaluation and operation of the Byron Plant;
 - (ii) whether the Staff believes such a study would be necessary in the safety evaluation and operation of the Byron Plant;
 - (iii) if your answer to (i) or (ii) above is no, specify the reasons upon which that position is based, and if your answer is yes, indicate what the Staff has recommended or will recommend be done on the matter, and provide the reasons for your answer;

- (d) indicate with specificity whether the Staff is aware of any attempts by CECO or anyone else to identify potential adverse systems interaction with respect to the Byron Plant and, if so, describe with particularity who is conducting such an identification, the nature and details of the identification process, and its results to date;
- (e) state whether the Staff has taken any steps or knows of any steps which have been taken by others to respond at Byron to the concerns addressed by Dr. S. Hanauer to E. G. Case (NRC) on August 18, 1977, quoted in paragraph 3.1.3 of the Affidavit of Richard B. Hubbard and Gregory C. Minor, November 12, 1980, and if yes, describe those actions in detail;
- (f) state whether the Staff believes a Class 9 accident (whether of the TMI-2 variety or otherwise) resulting from a combination of human error and equipment failure could occur at Byron and specify the reasons for your answer, indicating what, if any, measures the Staff is recommending or requiring be taken by CECO to prevent or mitigate these accidents;
- (g) identify all documents relied upon in or relating to your answers to Interrogatory No. 5.

Interrogatory No. 6

Concerning Contention 32:

- (a) indicate with specificity the Staff's position regarding the advisability of licensing the Byron Plant in light of the fact that the required compliance date for NUREG-0588 has been extended to June 30, 1983 and may possibly be extended to 1985, thus leaving Task A-24, NUREG-0410 unresolved;
- (b) state with specificity what the Staff believes to be adequate environmental qualification methodology for use at Byron given the unresolved nature of the qualification issue and the extended compliance date for NUREG-0588.
- (c) state whether you agree that the methodology outlined in your answer to part (b) of this Interrogatory should apply to Byron's important to safety equipment and to components thereof as well as to safety-related equipment, and explain your answer in detail;
- (d) state whether the Staff has completed its review of CECO's equipment qualification program at Byron and, if not, provide the schedule for its completion;

- (e) state with specificity the regulatory criteria used to judge the adequacy of CECO's equipment qualification program at Byron; and
- (f) identify all documents relied upon in or relating to your answers to Interrogatory No. 6.

Interrogatory No. 7

Concerning Contention 39 and with regard to the Byron FES, pp. 5-57 to 5-59:

- (a) state with particularity the basis for the estimated groundwater travel time from the Byron Plant to the nearest spring and then to the Rock River as 24 years and describe with particularity any field tests which have been performed to verify this conclusion;
- (b) state with particularity the basis for the conclusion that the travel time for most of the accident-affected groundwater would be greater than 24 years and describe with particularity any field tests which have been performed to verify this conclusion;
- (c) state with particularity the basis for the conclusion that in the event of release of radionuclides into the water pathways, "measurable retardation" by the dolomite aquifer, especially for cesium, would occur during the groundwater travel process, and indicate what specific effects that retardation would have on CECO's exposure dose calculations;
- (d) state with particularity the number and location of municipal wells actually unaffected by recharge from a contaminated Rock River because they screen into aquifers not closely connected to the water table aquifer, and the specific effects of that figure on CECO's exposure dose calculations;
- (e) state with particularity (i) the reasons that the current amount of grouting beneath the plant site would be ineffective to prevent contamination of groundwater flow, (ii) the reasons additional grouting and well point dewatering would allow isolation of "radioactive contamination near the source" when the present grouting does not, and (iii) the reasons why additional steps are not now being required or recommended by the Staff to interdict the flow of contaminated groundwater if the current level of grouting will be ineffective for that purpose;

- (f) in the event of a radioactive release to the underground aquifers, indicate with specificity what measures the Staff has required or recommended or will require or recommend to prevent the further migration of contaminated material away from the Byron site;
- (g) for each of the accident scenarios postulated as applicable to Zion which would also be applicable to Byron and which were assumed to lead to the release of radioactive materials to the groundwater or to the area beneath the Byron plant, or in the vicinity of the Byron plant, state with specificity by isotopes what varieties of radioactive material would be released, the range of core temperatures which have been assumed for any accident scenarios involving a core melt, and the assumed depth to which the core could sink, and the basis for these assumptions at Byron;
- (h) state with particularity any data known to the Staff on potentiometric surfaces for the Byron site (and the region surrounding the Byron site) water table aquifer and confined aquifer;
- (i) state with particularity all data known to the Staff on the permeability and/or transmissivity of the water table aquifer and confined aquifer in the Byron area, including all measurements and how those measurements were made;
- (j) state with particularity all data known to the Staff on the measurements of the porosity of the rocks underlying the Byron site, the specific yield of the Byron site aquifers, and how those measurements were made;
- (k) state with specificity all data known to the Staff on the dispersivity of the Byron water table aquifer and confined aquifer and the methods used to acquire that data; and
- (l) describe with particularity the Staff's position regarding the safety of licensing the Byron Plant where no safety evaluation of releases to water pathways has been done and the environmental study of such releases is based on an extrapolation of a generic study (NUREG-0440) which is contradicted by Sandia Study 80-1469 (June 1981);
- (m) identify all documents relied upon in or relating to your answers to Interrogatory No. 7.

Interrogatory No. 8

Concerning Contention 42:

- (a) state whether, to the Staff's knowledge, worker radiation exposure levels at Byron were calculated with a current dose-conversion factor based on models contained in ICRP-2 (NUREG/CR-0150);
- (b) if the answer to (a) above is no, indicate what method was used;
- (c) for whatever method or model was used to evaluate worker radiation exposure levels, indicate the reasons that the Staff believes that this is an adequate method of evaluation;
- (d) do you agree that low doses of radiation produce more cancers per rem than high doses of radiation, and if your answer is no, explain in detail the reasons for this position;
- (e) state specifically the realistic person-rem dose per year for each Byron reactor and why you consider that dose to be realistic, the number of major reactor overhauls, including but not limited to the replacement of steam generators, expected to be performed during the lifetime of each reactor, and the resulting person-rem dose from each of those overhauls, and explain in detail whether these figures are acceptable to the Staff and the reasons for the Staff's position;
- (f) state specifically the provisions made for the staffing of a Byron health physics department and for the training of that staff, and indicate whether the Staff believes these provisions are adequate and explain your reasoning;
- (g) as regards steam generators, provide detailed information on material selection, hardware configuration, maintenance tooling, and access platforms and cranes that have been specified so as to reduce or minimize the in-plant radiation exposure at Byron, and state whether the Staff considers these measures to be adequate and why or why not;
- (h) describe with particularity all Byron plant features which have been modified or added so as to provide a reduction of in-plant radiation exposure, and state whether the Staff considers these measures to be adequate and why or why not;

- (i) identify all documents relied upon in or relating to your answers to Interrogatory No. 8 not otherwise requested above.

Interrogatory No. 9

Concerning Contention 6l:

- (a) state in detail how the current environmental qualification methodology which CECO is using for Byron differs from the methodology in use prior to the events at TMI-2, and whether these modifications are acceptable to the Staff and why;
- (b) with regard to the discussion in the Byron FSAR concerning NUREG 0737 and Byron equipment which is similar or identical to the equipment which failed at TMI-2, state with particularity which items of equipment and components of equipment in that discussion the Staff has recommended or required or will recommend or require to be classified as important to safety and which the Staff has recommended or required or will recommend or require to be classified as safety related only, and specify the reasons for your answer;
- (c) state whether a full Class 9 analysis of Byron has been or will be required or recommended by the Staff to be conducted to establish the worst case environment for use in qualification of equipment important to safety, and (i) if your answer is yes, provide all data on the study, and (ii) if your answer is no, explain in detail the reasons why such an analysis has not been conducted or recommended or required;
- (d) state whether a full Class 9 analysis of Byron has been or will be required or recommended by the Staff to be conducted to establish the worst case environment for use in qualification of safety related equipment, and (i) if your answer is yes, provide all data on the study, and (ii) if your answer is no, explain the reasons why such an analysis has not been conducted or recommended or required;
- (e) state with particularity what safety margins the Staff feels to be acceptable to be used by CECO in establishing the range of accident environments that equipment important to safety must be qualified to withstand, and the reasons for your answer;

- (f) state with particularity what safety margins the Staff feels are acceptable to be used by CECO in establishing the range of accident environments that safety related equipment must be qualified to withstand; and
- (g) identify all documents relied upon in or relating to your answer to Interrogatory No. 9.

Interrogatory No. 10

Concerning Contention 62:

- (a) state whether or not you agree that multiple independent or common-cause failures of systems and equipment are possible at Byron;
 - (1) if your answer is no, explain the reasons for your answer in detail;
 - (2) if your answer is yes, state with particularity (i) which Byron-specific multiple failure sequences you believe could lead to a class 9 accident, (ii) what measures the Staff is requiring or recommending to CECO to employ or will require or recommend to CECO to employ in the future to prevent or mitigate the occurrence and the effects of such Class 9 accidents, and (iii) if no Byron-specific multiple failure sequences/class 9 scenarios have been recommended or required or if none will be recommended or required to be developed, explain in detail why they have not been or will not be;
- (b) state with particularity the Staff's position on the safety of licensing the Byron Plant when the only evaluation of a Class 9 accident appears to be one based upon a generic study contained in WASH 1400 and NUREG-0715 and which was done for NEPA purposes only and not for a safety evaluation; and
- (c) identify all documents relied upon in or relating to your answers to Interrogatory No. 10.

Interrogatory No. 11

Concerning Contention 63:

- (a) state specifically which systems, equipment, and equipment components at Byron which were classified as non-safety related prior to the events at TMI have been, as a result

of those events and/or Staff recommendations and/or requirements, reclassified important to safety, safety related, or have been assigned to an intermediate category between safety related and non-safety related, and if no such reclassification has occurred or been recommended or required, explain in detail why not;

- (b) state whether any Byron-specific non-design basis studies, including but not limited to a PRA, have been or will be required or recommended by the Staff to be done in order to evaluate or reclassify any equipment classified as non-safety related prior to TMI-2, and if no such studies have been done or are planned or have been or will be required or recommended, explain in detail why not;
- (c) state with specificity whether the Staff has required or recommended or will require or recommend that CECO evaluate improvements in risks which might result from the addition of safety features, including but not limited to filtered/vented containment, to reduce the releases during a Class 9 accident at Byron, and (i) if your answer is yes, provide all available data regarding that evaluation, and (ii) if your answer is no, explain in detail why not;
- (d) state with specificity whether the Staff has required or recommended or will require or recommend that CECO evaluate the improvement in risks that may result from the addition of a core catcher beneath the pressure vessel to delay release of core melt material to the environment, and (i) if your answer is yes, provide all available data regarding that evaluation, and (ii) if your answer is no, explain in detail why not; and
- (f) identify all documents relied upon in or relating to your answer to Interrogatory No. 11.

Interrogatory No. 12

Concerning Contention 77:

- (a) state specifically each piece of important to safety equipment and the components of such equipment which the Staff has recommended or required to be environmentally qualified by subjecting them first to the aging effects of radiation, temperature, and vibration, and then subjecting them to seismic testing requirements, and state with particularity the design, procedures, content, and results of any such testing;

- (b) if no such qualification procedures have been or will be required or recommended, explain in detail why not;
- (c) state whether all Byron important to safety equipment has been required or recommended, or will be required or recommended by the Staff to be analyzed and qualified for the full plant life (estimated at 30-40 years), and if not, state in detail which equipment has not been or will not be required or recommended to be so qualified and the length of time for which it has been qualified and the reasons for your answer;
- (d) state whether all Byron safety related equipment has been required or recommended, or will be required or recommended by the Staff to be analyzed and qualified for the full plant life (estimated at 30-40 years), and if not, state in detail which safety related equipment has not been or will not be required or recommended to be so qualified and the length of time for which it has been qualified and the reasons for your answer;
- (e) state whether all Byron important to safety equipment has a qualified life established through a qualification program acceptable to the Staff, and (i) if yes, identify all documents relevant thereto, and (ii) if no, explain why in detail;
- (f) state whether all Byron safety related equipment has a qualified life established through a qualification program acceptable to the Staff, and (i) if yes, identify all documents relevant thereto, and (ii) if no, explain why in detail; and
- (g) state in detail whether the Staff believes it will be safe to license Byron when the question of aging in relation to environmental qualification remains unresolved both because of the extended compliance date for NUREG-0588 and because NUREG-0588 does not indicate precisely how aging is to be included in the qualification process.
- (h) identify all documents relied upon in or relating to your answers to Interrogatory 12.

Interrogatory No. 13

Concerning Contention 108:

- (a) state whether you agree that the effects of accident-related radiation releases at Byron could reach as far as 100 miles;
 - (i) if your answer is no, state the maximum distance you contend the effects of such radiation releases could reach and state in detail the reasons for your answer, and include all data on any Byron-specific studies which have been done or which support those reasons; or

- (2) if your answer is yes, (i) indicate what provisions the Staff had required or recommended or will require or recommend to be made for emergency plans for areas beyond the 50-mile EPZ, and (ii) if no such plans have been required or recommended, state with particularity why not;
- (b) state whether any Byron-specific accident consequence study (including any computer study) has been required or recommended by the Staff, or will be required or recommended, to determine the adequacy of the 10 and 50-mile EPZ's and, if such a study has been done, identify the data used, the program used, the assumptions used, and provide the results of the study;
- (c) if no such study has been recommended or required or will not be recommended or required, state with particularity why not;
- (d) state whether the Staff has required or recommended or will require or recommend that CECO consider the effectiveness of using an actual consequence analysis resulting from a Class 9 accident to establish a realistic EPZ or extended EPZ for Byron, and (i) if your answer is yes, provide all data regarding that evaluation, and (ii) if your answer is no, explain in detail why not;
- (e) state whether the impact of a radiological accident at Byron has been evaluated by neighboring states, and, if so, indicate whether that evaluation included each state's emergency preparedness and planning;
- (f) explain in detail what provisions the Staff has recommended or required, or will recommend or require to be made at Byron for the possibility that, during an accident, personnel would be excluded from the EOF or other facilities due to ground dose exposure in the vicinity, and if no recommendation or requirements have been made, explain why;
- (g) describe in detail what steps the Staff has recommended or required, or will recommend or require to be taken to insure that field monitoring teams at Byron will be capable of providing the necessary data to update dose calculations during an emergency, and if no recommendation or requirements have been made, explain why;
- (h) state in detail what accuracy is expected for the value of radiation releases (in curies of each isotope released) which are to be used in dose calculation or offsite doses during an accident at Byron, whether the Staff considers that accuracy acceptable and why or why not;

- (i) state in detail the accuracy with which iodine release (in curies of Iodine) is expected to be known during an accident at Byron as well as the resulting accuracy of the prediction of thyroid dose of the plume and ingestion EPZ's, whether the Staff considers that accuracy acceptable and why or why not; and
- (j) identify all documents relied upon in or relating to your answers to Interrogatory No. 13.

Interrogatory No. 14

Concerning Contention 109:

- (a) with reference to the Class 9 accident scenarios and release categories which have been postulated for Zion in its PRA which would also be applicable to Byron, what quantities of actinide isotopes have been assumed to be released during core melt accidents, specifically including, but not limited to, the released quantities of plutonium, neptunium, and americium;
- (b) identify with particularity the rock outcroppings located in or near the Rock River in the vicinity of the Byron site;
- (c) state with particularity all data available to the Staff concerning any model which has been used to measure radionuclide migration into the groundwater, and in particular include information on the assumptions used regarding chemical reactions with and/or retardation of radionuclides by material of the rock underlying the Byron site, or if no model has been used, explain why the Staff has not required or recommended that such a model be used; and
- (d) identify all documents relied upon in or relating to your answers to Interrogatory 14.

Interrogatory No. 15

Concerning Contention III:

- (a) state specifically all data required or recommended or to be required or recommended by the Staff for use in calculating radiation dosage at Byron for the widely varying radiosensitivity to cancer induction by ionizing radiation which is found in a heterogenous population, or if none have been required or recommended, explain why or why not;

- (b) state specifically what plans or provisions the Staff has required or recommended or will require or recommend that CECO make for monitoring by air the micro-meteorological patterns of ground passage and radioactive fallout following Byron plant accidents involving releases of radiation to the air pathway, or if none have been required or recommended, explain why or why not;
- (c) state specifically the plans which the Staff has required or recommended or will require or recommend that CECO develop for training the public, and in particular public officials such as police and firemen, for procedures to be followed during a radiological emergency at Byron in order to reduce radiation exposure to the public, or if none have been required or recommended, explain why or why not;
- (d) state whether it is acceptable to the Staff for CECO to calculate internal dose and dose commitments at Byron to periods typically of 50 years, where the current life expectancy is approximately 70 years and the reasons for your answer;
- (e) state whether you agree that the acceptable radiation level for the Byron plant when operating in conformance with ALARA should be one mrem per year, and give detailed reasons for your answer;
- (f) state whether you agree that Byron should have a minimum of 50 off-area monitoring stations equipped with air samplers, fallout trays, gummed paper collectors, and rain water collectors to evaluate the alpha as well as the beta and gamma activity, and (i) if your answer is no, give detailed reasons for your answer; (ii) if your answer is yes, state with specificity what the Staff has recommended or required or will recommend or require CECO to do to establish such monitoring stations and the number of such stations planned;
- (g) state whether you agree that NTA thick emulsion film monitoring is insufficient for a personnel neutron monitoring program at Byron, and (i) if your answer is no, explain your answer in detail; (ii) if your answer is yes, explain in detail what other monitoring techniques the Staff has recommended or required or will recommend or require CECO to use, including but not limited to electro-chemical etching of polycarbonate foils and CR-39 foils;
- (h) (i) explain with particularity the methods the Staff has recommended or required or will recommend or require CECO to use at Byron for: (1) identifying short-lived iodine and noble gases; (2) identifying the chemical form of radioiodine; (3) distinguishing between airborne gases and particulates; and (4) measuring quantitatively the carbon-14;

- (ii) if no monitoring systems, as described in subpart (i) above have been or will be recommended or required, state in detail the reasons that no such monitoring will be recommended or required
- (i) state whether you agree that it is unsatisfactory to measure only absolute values of alpha, beta, and gamma dose levels at Byron, and (i) if your answer is yes, specify in detail what the Staff has recommended or required, or will recommend or require CECO to do to measure the emissions of individual radionuclides at Byron; (ii) if your answer is no, give detailed reasons for your answer;
- (j) identify all documents relied upon in or relating to your answers to Interrogatory 15.

Interrogatory No. 16

Concerning Contention 112:

- (a) state whether you agree that spreading a given level of person rems across progressively larger numbers of people results in an increasing number of malignancies, and (i) if your answer is no, give detailed reasons for your answer, (ii) if your answer is yes, explain in detail the reasons the expected utilization of large numbers of transient workers at the Byron Plant is acceptable to the Staff;
- (b) describe in detail what design changes have been made or that the Staff has recommended or required, or will recommend or require to be made on the Byron steam generators to reduce the frequency with which maintenance is required and to eliminate the need for their replacement or to allow replacement without occupational exposure;
- (c) describe in detail any proposed educational program on radiation protection and the effects of radiation exposure, including genetic, teratogenic, and somatic effects, which the Staff has recommended or required, or will recommend or require to be offered to or required of all Byron employees, or if none will be recommended or required explain why not;
- (d) describe in detail any prospective program for fecal analyses, differential blood counting, wound decontamination, and lense opacity examination of Byron plant workers as recommended or required, or to be recommended or required by the Staff, and if no programs have been or will be recommended or required, state in detail why not;

- (e) describe in detail any plans which have been made for dry runs prior to any "hot" operations and/or emergency procedures to be followed by Byron plant personnel in the event of an emergency as recommended or required, or to be recommended or required by the Staff, and if no plans have been or will be recommended or required, state in detail why not;
- (f) describe in detail any provisions which have been made for only assigning plant workers beyond childbearing age to "hot" operations as recommended or required by the Staff, and if no provisions have been or will be recommended or required, state in detail why not;;
- (g) explain in detail all provisions which have been made for recordkeeping and the computerization of records of worker radiation exposure at Byron, including but not limited to recordkeeping with regard to: alpha, beta, gamma, fast neutron, thermal neutron, epithermal neutron, urine and feces analyses; medical records; potential and actual radiation incidents; skin and clothing contamination; any diagnosis of malignancy; birth defects; and the confidentiality and availability to workers of such records as recommended or required, or to be recommended or required by the Staff, and if no provisions have been or will be recommended or required, state in detail why not; and
- (h) identify all documents relied upon in or relating to your answer to Interrogatory No. 16.

Interrogatory No. 17

- (a) Separately with respect to each of the League's Revised Contentions Nos. 1A, 8, 19, 22, 28, 32, 34, 39, 41, 42, 47, 53, 54, 61, 62, 63, 71, 77, 106, 108, 109, 111, and 112, state in specific detail:
 - (i) Do you agree that each such Revised Contention is related or applicable to, in whole or in part, a consideration of continued construction and/or permission to operate each or both of the Byron Units? If your answer to this question with respect to any Revised Contention is yes, please explain your answer in detail. If your answer to this question is no with respect to any Revised Contention, please explain your answer in detail, including all factual and other reasons why you believe each such Revised Contention is unrelated or inapplicable to the Byron Units;
 - (ii) With respect to each "no" answer in (i) above, state in specific detail whether it is your position that the problem or issue raised by each such Revised Contention is totally inapplicable and unrelated to the Byron Units, in the sense that no consideration of

any kind need be had concerning each such Revised Contention's relation or applicability to the Byron Units;

- (iii) If any part of your answer to (i) or (ii) above relating to any Revised Contention is based in whole or in part upon the position that the subject matter of a Revised Contention is inapplicable (or unrelated) because (1) the subject matter has been considered at the construction phase hearing of the Byron Units; (2) the subject matter is barred from consideration at the operating hearings herein by an NRC regulation, rule, criterion, policy or convention; or (3) a Revised Contention has not specifically set forth a sufficient nexus (within the meaning of the River Bend Decision, ALAB-444, 6 N.R.C. 760 [1977]) regarding the Byron Units, then with respect to each such answer regarding each such Revised Contention, please also state in specific detail, giving reasons for your position:
- (a) Regarding (iii)(1) above, why it is your position that no facts or events have occurred subsequent to the issuance of the construction permits herein which present a sufficient ground for re-examining the subject matter of the Revised Contention at the operating stage herein;
- (b) Regarding (iii)(2) above, what NRC regulation, rule, criterion, policy or convention you believe bars consideration of the subject matter of the Revised Contention, and why you contend that there is no reason for waiving the applicability of any such regulation, rule, policy, criterion or convention to this proceeding; and
- (c) Regarding (iii)(3) above, what fact, opinion, or other analysis of which you are aware (specifically and in detail explaining such fact, opinion, or other analysis) which can form the basis for a sufficient nexus to the Byron Units; in connection with your answer to this subpart, if you state you are unaware of any facts, opinions, or analyses which can form such nexus, please also state in detail whether (and, if so, why) you believe it is impossible, as a matter of scientific or environmental application, for any nexus to be supplied whatsoever.

Interrogatory No. 18

- (a) To the extent not done in connection with each Interrogatory above, identify with particularity (including dates, addressor, addressee and subject matter) each document and communication which you either:
- (i) have consulted or in any way reviewed in connection with any of your answers to these interrogatories; and/or
 - (ii) believe should be considered or reviewed in connection with any such answer,

in both cases specifying also in detail which document and communication relates, and in what manner it relates, to each of your Interrogatory answers.

Interrogatory No. 19

- (a) Identify all persons who prepared or assisted in the preparation of any of the answers or parts of the answers to any of the above Interrogatories, specifying for each person which answer(s) he or she prepared or assisted in preparing.
- (b) For each of the League's Revised Contentions listed in Interrogatory 17(a), state the following:
- (i) the identity of each person expected to be called as a witness at the hearing or otherwise to submit testimony or Affidavit(s) concerning that Contention;
 - (ii) the substance of the witness's testimony or Affidavit(s); and
 - (iii) the witness's professional or other qualifications to testify or give Affidavit(s) on the subject matter on which the witness will testify or give Affidavit(s).

Interrogatory No. 20

- (a) Identify all persons (and their two closest assistants) whose advice was sought in the preparation of any of the answers or parts of the answers to any of the above Interrogatories, specifying for each person the answer(s) or portions of answers on which their advice was sought.
- (b) For each of the League's Revised Contentions listed in Interrogatory 17(a) above, state the following:

- (i) the identity of each person (and their two closest assistants) whose advice is expected to be sought regarding the submission of hearing testimony or Affidavit(s) concerning that Contention;
- (ii) the substance of both the testimony and Affidavit(s) on which the advice will be sought and the substance of that advice; and
- (iii) each person's professional or other qualifications to render advice on the subject matter of the testimony and/or Affidavit(s) on which his advice will be given.

ROCKFORD LEAGUE OF WOMEN VOTERS,

By: _____
One of Their Attorneys

Myron M. Cherry, p.c.
Peter Flynn, p.c.
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Chicago, Illinois 60602
(312) 372-2100

PROOF OF SERVICE

I certify that a copy of the foregoing League of Women Voters of Rockford, Illinois' First Interrogatories to the NRC Staff were served upon all parties of record herein, by postage prepaid and properly addressed mail, this __th day of October, 1982.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
COMMONWEALTH EDISON COMPANY) Docket Nos. 50-454
) 50-455
(Byron Station, Units 1 and 2))

ROCKFORD LEAGUE OF WOMEN VOTERS'
MOTION FOR PRODUCTION OF DOCUMENTS BY THE N.R.C. STAFF

The Rockford League of Women Voters ("League"), by their attorneys Cherry & Flynn, and pursuant to 10 C.F.R. Sec. 2.744, hereby move for the production of all documents identified in the Answers of the N.R.C. Staff ("Staff") to the League's First Set of Interrogatories to the N.R.C. Staff, these documents not otherwise being available pursuant to 10 C.F.R. Sec. 2.790 and which are necessary to ascertain the full basis for the Staff's Answers to each of the League's Interrogatories.

Respectfully submitted,

ROCKFORD LEAGUE OF WOMEN VOTERS

By: _____
One of Its Attorneys

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