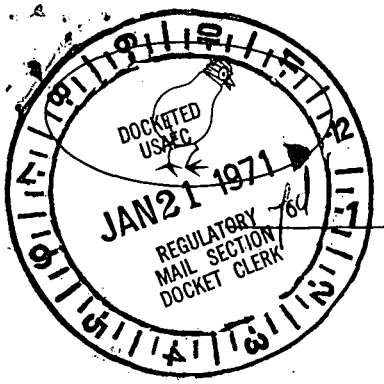

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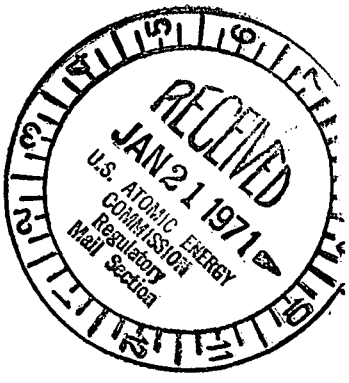

January 18, 1971

Dr. Peter A. Morris, Director
Division of Reactor Licensing
U.S. Atomic Energy Commission
Washington, D.C. 20545

Subject: Proposed Change No. 7 to Appendix A of DPR-19, AEC Dkt 50-237

Dear Dr. Morris:

Pursuant to Section 50.59 of 10 CFR Part 50 and paragraph 3.B of Facility License DPR-19, Commonwealth Edison hereby submits Proposed Change No. 7 to Appendix A of DPR-19 (Dresden Unit 2). The purpose of the changes requested in this proposed change is to establish compatability with Appendix A of DPR-25 (Dresden Unit 3). A similar request to change Appendix A of DPR-2 (Dresden Unit 1) is being submitted concurrently under separate cover. The changes requested in this proposed change are in Sections 3.8 and 4.8 on Radioactive Materials and Section 6.0 on Administrative Controls. The specific changes are as follows:

Replace Sections 3.8 and 4.8 (pages 146-159) with new Sections 3.8 and 4.8 (pages 146-158) - attached.

Replace Figure 6.1.3 (Shift Manning Chart) with a new Figure 6.1.3 - attached.

Section 50.59 of 10 CFR Part 50 and paragraph 3.B of Facility License DPR-19 require the submission of an appropriate Safety Analysis Report in support of a proposed change to Appendix A of DPR-19. The two changes requested in Proposed Change No. 7 are merely incorporation of specifications contained in Appendix A of DPR-25 and applicable to all three units at Dresden Station; therefore, no separate Safety Analysis Report in support of these changes will be submitted herewith. The Bases to the revised Sections 3.8 and 4.8 provide the equivalent of a Safety Analysis Report in support of this change, whereas the revised Figure 6.1.3 simply represents the increased shift staffing necessary to man Unit 3 along with Units 1 and 2.

In our opinion, the proposed change does not result in hazards different from or greater than those analyzed in the Final Safety Analysis Report. Specifically, there is (1) no increase in the probability of, or (2) no increase in the possible consequences of, or (3) no creation of a credible probability of an accident or equipment malfunction different from those previously evaluated in the FSAR.

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Therefore, the margin of safety as defined in the Bases for any Technical Specification is not reduced.

Proposed Change No. 7 has been reviewed and approved by Commonwealth Edison's Nuclear Review Board.

In addition to three signed originals, 19 copies of Proposed Change No. 7 are also submitted.

Very truly yours,

Byron Lee Jr.

Byron Lee, Jr.
Assistant to the President

SUBSCRIBED and SWORN to before me this 18th day of January, 1971.

Patricia A. Nelson
Notary Public

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3.8 LIMITING CONDITION FOR OPERATION	4.8 SURVEILLANCE REQUIREMENT

3.8 RADIOACTIVE MATERIALS

Applicability:

Applies to the radioactive effluents from the plant.

Objective:

To assure that radioactive material is not released to the environment in an uncontrolled manner and to assure that any material released is kept as low as practicable and, in any event, is within the limits of 10CFR20.

Specification:

A. Airborne Effluents

1. Radioactive gases released from the reactor building ventilation stack and plant chimney shall be continuously monitored. To accomplish this, at least one reactor building ventilation stack monitoring system and plant chimney monitoring system shall be operable at all times.

2. Due to the existence of Dresden Unit 1 and two Dresden Unit 2/3 stacks in close vicinity, a set of equations are needed to express the airborne effluents limits. The symbols in the equations stand for the following:

   Q_1 = release rate from Unit 1 plant chimney
   Q_2 = release rate from Units 2 and 3 plant chimney with only Unit 2 or only Unit 3 operating (not both).
   $Q_{2,3}$ = release rate from Units 2 and 3 plant chimney with both Units operating
   Q_{RS} = release rate from Units 2 and 3 reactor building ventilation stack.

4.8 RADIOACTIVE MATERIALS

Applicability:

Applies to the periodic monitoring and recording of radioactive effluents.

Objective:

To ascertain that radioactive releases are within allowable values.

Specification:

A. Airborne Effluents

1. The plant chimney and reactor building ventilation stack monitoring systems shall be functionally tested and calibrated every three months.

3.8 LIMITING CONDITION FOR OPERATION	4.8 SURVEILLANCE REQUIREMENT
a. The release rate for gross activity, except for halogens and particulates with half lives longer than eight days, shall not exceed: $$\frac{Q_1}{0.56} + \left[\frac{Q_2}{0.7} \text{ or } \frac{Q_{2,3}}{0.9}\right]^{(a)} + \frac{Q_{RS}}{0.09} \leq 1.0$$ where Q is measured in Curies/sec.	2. a. Station records of gross ventilation stack and plant chimney release rate of gaseous activity shall be maintained on an hourly basis to assure that the specified rates are not exceeded and to yield information converning general integrity of the fuel cladding. Records of isotopic analyses shall also be maintained. Within one month after initial commercial service of the unit, an isotopic analysis will be made of the gaseous activity release rate. From this sample a ratio of long lived to short lived activity will be established. Daily samples of off-gas will be taken and gross ratio of long lived to short lived activity determined. When the daily samples indicate a change in the ratio of greater than 20% from the ratio established by the previous isotopic analysis, a new isotopic analysis will be performed. A new isotopic analysis of off-gas will be performed at least quarterly. Gaseous release of tritium shall be calculated on a monthly basis from measured data.
b. The summation of release rates of halogens and particulates with half lives greater than 8 days released to the environs as part of the airborne effluents shall not exceed: $$\frac{Q_1}{2.4 \times 10^{-6}} + \left[\frac{Q_2}{3.5 \times 10^{-6}} \text{ or } \frac{Q_{2,3}}{4.3 \times 10^{-6}}\right]^{(a)} + \frac{Q_{RS}}{0.12 \times 10^{-6}} \leq 1.0$$ where Q is measured in Curies/sec.	b. Station records of release of iodines shall be maintained on the basis of all stack and plant chimney filter cartridges counted. The filter cartridges shall be counted weekly, when the measured release rate of gross beta-gamma activity is less than 10% of the release limit specification 3.8.A.2.a, otherwise the cartridges shall be counted at least twice a week. Particulate isotopic analysis shall be made and recorded quarterly.

3.8 LIMITING CONDITION FOR OPERATION	4.8 SURVEILLANCE REQUIREMENT
3. If the limits of 3.8.A are exceeded, an orderly load reduction of the unit(s) causing these limits to be exceeded shall be initiated immediately to reduce the releases below the limits of 3.8.A. (Note two equations on page ~~134~~ 147) (a) Where the term in parentheses represents the operational status of Units 2 and 3. If either Unit 2 or 3 is shut down, then the first term (Q_2/value) shall be used. If both units are in operation, then the second term ($Q_{2,3}$/value) shall be used.	
B. Mechanical Vacuum Pump 1. The mechanical vacuum pump shall be capable of being isolated and secured on a signal of high radioactivity, whenever the main steam isolation valves are open. 2. If the limits of 3.8.B are not met following a routine surveillance check, orderly shutdown shall be initiated.	B. Mechanical Vacuum Pump At least once during each operating cycle verify automatic securing and isolation of the mechanical vacuum pump.
C. Liquid Effluents 1. Radioactive liquid released from the facility shall be continuously monitored. To accomplish this either the radiation monitor or the discharge line on the discharge canal sampler shall be operable.	C. Liquid Effluents 1. The radiation monitor shall be calibrated quarterly and functionally tested monthly. The operability of the sampler shall be verified on a daily basis.

3.8 LIMITING CONDITION FOR OPERATION	4.8 SURVEILLANCE REQUIREMENT
2. The concentration of gross beta activity (above background) in the condenser cooling water discharge canal shall not exceed the limits stated below unless the discharge is controlled on a radionuclide basis in accordance with Appendix B, Table II, Column 2 of 10CFR20 and note 1 thereto: Maximum Concentration - 1×10^{-7} μCi/ml	2. Station records shall be maintained of the radioactive concentration and volume of each batch of liquid effluent released and of the condenser cooling water flow at time of discharge. Isotopic analyses including determination of tritium of representative batches of liquid effluent shall be performed and recorded at least once per quarter. Each batch of effluent released shall be counted for gross alpha and beta activity and the results recorded. At least once per month a gamma scan of representative batches of effluent shall be performed and recorded to determine the gamma energy peaks of these batches. If energy peaks other than those determined by the previous isotopic analyses are found, a new set of isotopic analyses shall be performed and recorded.
3. Two independent samples from a tank shall be taken and analyzed and the valve line-up checked prior to discharge of liquid effluents from that tank.	3. The performance and results of independent samples and valve checks shall be logged.
4. If the limits of 3.8.C cannot be met, radioactive liquid effluents shall not be released.	
D. Radioactive Waste Storage The maximum amount of radioactivity in liquid storage in the Waste Sample Tanks, the Floor Drain Sample Tanks and the Waste Surge Tank shall not exceed 3.0 curies and the maximum amount of radioactivity in any tank shall not exceed 0.7 curies. If these conditions cannot be met, the stored liquid shall be recycled within 24 hours to the Waste Collector Tanks or the Waste Neutralizer Tanks until the condition is met.	D. Radioactive Waste Storage A sample from each of the Waste Sample Tanks Floor Drain Sample Tanks, and Waste Surge Tank shall be taken, analyzed and recorded every 72 hours. If no additions to a tank have occurred since the last sample, the tank need not be sampled until the next addition.

3.8 LIMITING CONDITION FOR OPERATION	4.8 SURVEILLANCE REQUIREMENT
E. General It is expected that releases of radioactive material in effluents will be kept at small fractions of the limits specified in Section 20.106 of 10CFR Part 20. At the same time the licensee is permitted the flexibility of operation, compatible with considerations of health and safety, to assure that the public is provided a dependable source of power even under unusual operating conditions which may temporarily result in releases higher than such small fractions, but still within the limits specified in Section 20.106 of 10CFR Part 20. It is expected that in using this operational flexibility under unusual operating conditions the licensee will exert his best efforts to keep levels or radioactive material in effluents as low as practicable.	E. General Operating procedures shall be developed and used, and equipment which has been installed to maintain control over radioactive materials in gaseous and liquid effluents produced during normal reactor operations, including expected operational occurrences, shall be maintained and used, to keep levels or radioactive material in effluents released to unrestricted areas as low as practicable. The environmental monitoring program given in Table 4.8.1 shall be conducted. Whenever the airborne effluents exceed 1/3 of the limits in Specification 3.8.A.2, measurements 2, 3, 5, and 6 of Table 4.8.1 shall be performed at each farm adjacent to the site and at any cultivated or grazing land on-site. A report shall be submitted to the Commission at the end of each six-months' period of operation specifying total quantities of radioactive material released to unrestricted areas in liquid and gaseous effluents during the previous six months and such other information on releases as may be required to estimate exposures to the public resulting from effluent releases. If quantities of radioactive material released during the reporting period are unusual for normal reactor operations, including expected operational occurrences, the report shall cover this specifically. On the basis of such reports and any additional information the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such action as the Commission deems appropriate.

TABLE 4.8.1

SAMPLE COLLECTION AND ANALYSIS

DRESDEN NUCLEAR POWER STATION - ENVIRONMENTAL MONITORING PROGRAM

Sample Media	Type of Analysis	Collection Sites	Planned Collection Frequency	Planned Collection Dates
1. Airborne Particulate (AP)	Beta Gamma Scans (Special)	*Elwood J-15 *Joliet J-48 *Wilmington 464 Lorenzo J-54 *Morris 016 *Lisbon 024 *Coal City J-68 Bennett Farm BE *Channahon CH *Plainfield PL McCabe 0672 Minooka J-27 Clay Products J-21 On-Site Stations #1, #2, #3	Weekly	---
*Airborne I-131 Screen (in add. to airborne particulate	I-131			
	Alpha	Same Locations as above	Monthly	---
2. Gamma Background (Ion Chambers)	Gamma	Same Locations as Air Particulate Stations	Weekly	---
3. a. Beta-Gamma Background (Film Badges)	Beta-Gamma	Same Locations as Air Particulate Stations	Monthly	---
b. Gamma Background (TLD)	Gamma	Same Locations as Air Particulate Stations	Semi-Annual and Annual	June-Dec.

TABLE 4.8.1 (cont)

Sample Media	Type of Analysis	Collection Sites	Planned Collection Frequency	Planned Collection Dates
4. Fallout – Airborne Solids and Liquids (WF)	Beta	Brandon Lock and Dam, Dresden On-Site	Monthly	---
	Gamma Scans (Special)	Station #2, Milk Stations	Weekly	---
	Alpha	Dresden On-Site Station #2, Brandon Lock and Dam	Monthly	---
5. Fallout – Soil (SO)	Beta-Alpha	Brandon Lock and Dam Dresden On-Site Station #2	Annually	June
	Gamma Scans (Routine)			
	^{89}Sr, ^{90}Sr, ^{137}Cs			
6. a. Fallout – Feed Crops and Other Vegetation (VF)	Beta	Same Locations as Air Particulate Stations (^{89}Sr, ^{90}Sr at On-Site Stations #1 #2, and #3 only)	Annually during harvest time, where appropriate	October
	Gamma Scans (Routine)			
	^{89}Sr, ^{90}Sr			
b. Fallout – Foodstuffs	Beta	TruckFarms	3 times/year including harvest for each crop	June-July-September
7. Surface Water (SW)	Beta	Dresden Inlet and Discharge Canals Illinois River EJ&E Bridge below Dresden Dam	Weekly Composite	---
	Gamma Scans (Special)			
	^{89}Sr & ^{90}Sr		Semi-Annual	June-Dec.
	Tritium		Quarterly	---
	Tritium	Corp. of Eng. Pump Sta.	Quarterly	---
	Beta	Illinois River at Morris (State of Ill. Sample)	Semi-Monthly Composite	Supplied by State
	Gamma Scans (Special)			
	^{89}Sr & ^{90}Sr		Semi-Annual Composite	June-Dec.
	Tritium		Quarterly Composite	---

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TABLE 4.8.1 (cont)

Sample Media	Type of Analysis	Collection Sites	Planned Collection Frequency	Planned Collection Dates
8. Bottom Sediments (SI)	Beta Gamma Scans (Routine) ^{89}Sr, ^{90}Sr	Dresden Inlet Canal Dresden Discharge Canal Illinois River EJ&E Bridge	Semi-Annual	April-Oct.
9. Slime (SL)	Beta Gamma Scans (Routine)	Dresden Inlet Canal Dresden Discharge Canal Illinois River EJ&E Bridge	Quarterly Aug.-Nov.	Feb.-May- Aug.-Nov.
10. Well Water (WW)	Beta Gamma Scans (Special)	Dresden Lock and Dam (DL) Hansel (HA) Olson (OL) Bennett (BE) Joliet Yacht Club (JYC)	Monthly Quarterly	--- Jan.-April-July-Oct. Feb.-May-Aug.-Nov. Jan.-April-July-Oct. Feb.-May-Aug.-Nov.
	Alpha-Beta, Tritium Alpha-Beta, Tritium Beta Gamma Scans (Special)	Thorsen (TH) Anderson (AN) Dresden Well #1 (W1) Dresden Well #2 (W2) Drinking Fountain – Unit #1 (DF)		Jan.-April-July-Oct. Feb.-May-Aug.-Nov. Jan.-April-July-Oct. Feb.-May-Aug.-Nov.

TABLE 4.8.1 (cont)

Sample Media	Type of Analysis	Collection Sites	Planned Collection Frequency	Planned Collection Dates
11. a. Milk (when available) (M)	^{131}I	Davidson (DA and Dhuse (DH)	Weekly (April thru October)	---
	^{89}Sr, ^{90}Sr ^{137}Cs Elemental Calcium		Monthly	---
b. Grass (G)	^{89}Sr, ^{90}Sr, ^{137}Cs	Davidson (DA) and Dhuse (DH)	Monthly	---
12. Fallout – Fluoride (FS) (Strip Samplers)	Fluoride	GE-MFRP (12 Samples)	Quarterly	---
Fallout – Fluoride (FV) (Vegetation)	Fluoride	GE-MFRP (12 Samples)	Annually	---
13. Special Analyses	^{131}I Grass ^{91}Sr Air Particulate $^{89-90}Sr$ Air Particulate ^{131}I Rainfall $^{89-90}Sr$ Rainfall			
14. Aquatic Animal	^{90}SR, ^{134}CS, ^{60}CO on fish Gross Beta, Alpha, Gamma	Illinois River in Dresden Pool	Quarterly	Shall be adjusted to coincide with open season for game fish and other controlled aquatic animals

TABLE 4.8.1 (cont)

Notes:

SAMPLE CODING SYSTEM

Sample Types

AP	Air Particulate
SW	Surface Water
WW	Well Water
WF	Fallout Water
SI	Silt
SL	Slime
M	Milk
G	Grass
VF	Vegetation
FF	Foodstuffs
SO	Soil
FS	Fluoride - Strip Samplers
FV	Fluoride - Vegetation

Sample Location

J15	Elwood
J48	Joliet, Brandon Road
464	Wilmington
J54	Lorenzo
016	Morris
024	Lisbon
J68	Coal City
BE	Bennett Farm

Sample Location

CH	Channahon
PL	Plainfield
0672	McCabe
J27	Minooka
J21	Illinois Clay Products
A	On-Site Monitor Station #1
B	On-Site Monitor Station #2
C	On-Site Monitor Station #3
M	Morris (On Illinois River)
K	Kankakee River (At Inlet Canal)
D	DesPlaines River (At Discharge Canal)
MS	Morris (Illinois River - State)
DL	Dresden Locks
W1	Dresden Well #1
W2	Dresden Well #2
DF	In-Plant Drinking Fountain - Unit #1
TH	Thorsen Farm
JYC	Joliet Yacht Club
AN	Anderson Farm
OL	Olson
DA	Davidson
DH	Dhuse Farm

Bases:

A. Airborne Effluents - Detailed dose calculations for several locations offsite have been made and are described in Appendix A of the SAR. These calculations consider site meteorology, buoyancy characteristics, and isotopic content of the effluent of each unit. Independent dose calculations for several locations offsite have been made by the AEC staff. The method utilized onsite meteorological data developed by the applicant and utilized diffusion assumptions as developed by the applicant with the exception that: (1) the Stumke correction factor for plume rise was not allowed, (2) the height of the buff north of the site (30 meters) was subtracted from the stack height for calculational purposes, (3) Pasquill diffusion parameters rather than Hanford parameters were used, (4) the staff used a reflection factor of 2 for the calculation of Specification 3.8.A.2.

The method utilized by the staff is described in Section 7-5.2.5 of "Meteorology and Atomic Energy-1968," equation 7.63 being used. The results of these calculations were more conservative than those generated by the applicant and were thus chosen to be used as the basis of establishment of the limits. Based on these calculations, a release rate limit of gross activity, except for halogens and particulates with half-lives greater than eight days, in the amount of (a) 0.56 curies/sec. from the Unit 1 plant chimney or (b) 0.9 curies/sec. from the Units 2/3 plant chimney or (c) 0.09 curies/sec. from the ventilation stack will not result in offsite annual doses in excess of the limits specified in 10 CFR 20. Because a lower bouyancy factor is obtained when either Unit 2 or 3 is shut down, the equation must be changed so that the operating unit discharge is 0.7 curies per sec. These limits are based on a noble gas mixture whose energy with 30 minute holdup is 0.7 Mev. If on analysis this average energy increases, the average annual release limit must be decreased accordingly.

Considering the above, 3.8.A.2 gives equations to be used in summing the airborne effluents from the Unit 1 plant chimney, the Unit 2/3 plant chimney, and the Unit 2/3 ventilation stack that will assure that total offsite doses are not in excess of the limits specified in 10 CFR 20.

Detailed calculations of ground level air concentrations of halogens and particulates with half-lives greater than 8 days at several offsite locations have been made as described in Appendix A of the SAR. These calculations consider site meteorolgy and buoyancy characteristics of the effluent from each unit. Based on these calculations, the release rate limit for these isotopes in the equation in section 3.8.A.2.b is obtained. Use of this equation assures that releases will not result in offsite doses in excess of those specified in 10 CFR 20.

The assumptions used by the AEC staff for these calculations were; (1) Onsite meteorological data were used for the most critical 22.5 degree sector. (2) No building wake credit was used. (3) To consider possible reconcentration effects a reduction factor of 700 was applied to allow for the milk production and consumption mode of uptake.

Before initial operation of the nearby Midwest Fuel Reprocessing Plant the above limits will be adjusted to reflect the dose contribution of this facility.

B. Mechanical Vacuum Pump - The purpose of isolating the mechanical vacuum pump line is to limit release of activity from the main condenser. During an accident, fission products would be transported from the reactor through the main steamlines to the main condenser. The fission product radioactivity would be sensed by the main steamline radioactivity monitors which initiate isolation.

C. Liquid Effluents - Liquid effluent release rate will be controlled in terms of the concentration in the discharge canal. In the case of unidentified mixtures, such concentration limit is based on assumption that the entire content is made up of the most restrictive isotope in accordance with 10CFR20. Such a limit assures that even if a person obtained all of his daily water intake from such a source, the resultant dose would not exceed that specified in 10CFR20. Since no such use of the discharge canal is made and considerable natural dilution occurs prior to any location where such doses usage could occur, this assures that off-site doses from this source will be far less than the limits specified in 10CFR20.

In addition to the two independent samples of each batch prior to discharge, a radiation monitor on the discharge line and a sampler in the discharge canal give further assurance that discharges are kept at or below the maximum limits at all times.

D. Radioactive Waste Storage-As discussed in the SAR, the radioactive waste tanks that are at or above grade are located such that their postulated catastrophic failure could cause release of their contain radioactivity to the Illinois River. To assure that such a postulated release would not raise radioactivity levels in the river to values greater than ten times 10CFR20, a limit on the amount of radioactivity the tanks can contain is established.

The performance of the radiation monitoring system relative to detecting fuel leakage shall be evaluated during the first five years of operation. The conclusions of this evaluation will be reported to the Atomic Energy Commission.

E. General - The environmental monitoring program has been established on the basis of experience gained in conducting the environmental monitoring program for Dresden 1.

It is recognized that a precise determination of environmental dose from a certain emission from a facility is only possible by direct measurement. Such information will be provided by the environmental monitoring program conducted at and around the site. If the stack emission ever reaches a level such that it is measureable in the environment, such measurements will provide a basis for adjusting the proposed stack limit long before the effect in the environment is of any concern for permissible dose.

In addition to the background information from the Dresden 1 program, the environmental survey uses post-operational measurements for normal operational background data. Samples are collected at points adjacent to the plant, where concentrations would be expected to be the highest if a release should occur and are

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compared to samples which have been collected simultaneously at points where the concentration of station effluents is expected to be negligible. The reference samples provide a running background which will make it possible to distinguish significant radioactivity introduced into the environment by the operation of the station from that introduced by nuclear detonations and other sources.

The planned sampling frequencies will assure that changes in the environmental radioactivity can be detected. The materials which first show changes in radioactivity are sampled most frequently. Those which are less affected by transient changes but show long term accumulations are sampled less frequently. However, the specific sampling dates are not crucial, and adverse weather conditions or equipment failure may on occasion prevent collection of specific samples.

The program is responsive to the radiological matters identified by the Fish and Wildlife Service in their correspondence with the AEC.

FIGURE 6.1.3

SHIFT MANNING CHART

SHIFT STAFFING FOR NORMAL OPERATION

Staff Positions	License		No. of Operating Units			
	Type	No. of Units	0	1	2	3
Shift Engineer (SE) and/or Shift Foreman (SF)	SO(1)	3	1	1	2	2
Nuclear Station Operator(2) (NSO)	O	3	1	2	3	4
Equipment Operator and/or Equipment Attendant	--	--	2	3	4	5
Rad. Protection Men	--	--	1	1	1	1

MINIMUM CONTROL ROOM STAFFING

Staff Positions	No. of Operating Units			
	0	1	2	3
SE, SF OR NSO(3)	1	1	1	0
NSO(2)	0	1	2	3

Notes:
1. A Licensed Senior Operator will be on site at all times.
2. If an individual is not licensed on all three units, he will only operate the unit(s) for which he is licensed.
3. NSO licensed on all three units.