Procedure/Document Number: IPEC-EP	Revision: 17-02 (MERLIN Revision 21)
Equipment/Facility/Other: Indian Point Energy Center (IPEC)	
Title: Indian Point Energy Center Emergency Plan	

Part I. Description of Proposed Change:

The activity being reviewed is a plan revision to IPEC-EP 17-01, "Indian Point Energy Center Emergency Plan", including:

Refer to attached Revision Matrix

Part II. Description and Review of Licensing Basis Affected by the Proposed Change:

The IPEC Emergency Plan has been reviewed through the Process Applicability Determination (PAD) in accordance with the criteria described in NEI 96-07 and EN-LI-100. This proposed change does not (1) change the facility or procedures as described in the UFSAR or (2) create a test or equipment not described in the UFSAR and is governed under the Emergency Plan 10 CFR 50.54(q) screening process in accordance with EN-EP-305. These proposed changes do not involve structures, systems or components controlled by 10 CFR 50.59 or 72.48 and do not have the potential to impact any of the License Basis Documents (LBDs) on the PAD form, except for the Emergency Plan. All responses to the questions contained in sections III and IV of the PAD form were determined to be "no impact". Since these proposed changes do not contain any requirements that could affect any LBDs other than the Emergency Plan, it is determined to be fully governed under 10 CFR 50.54(q). In addition to those reviewed for the PAD, each of the following documents/relevant sections was reviewed:

a) Reviewed current Plan, all sections Part 1 and Part 2. No additional relevant or affected Plan content was identified.

b) The original Plans, U2 1970 and U3 1973, were not available for review.

c) Historical 10CFR50.54 (q) documents were manually reviewed dating back to 2005 for significant changes. No impact identified based on proposed changes.

Procedure/Document Number: IPEC-EP	Revision: 17-02 (MERLIN Revision 21)
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Part III. Describe How the Proposed Change Complies with Relevant Emergency Preparedness Regulation(s) and Previous Commitment(s) Made to the NRC:

10 CFR 50.47(b)(5)—Emergency Notifications (Change 11)

- Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway.

Site Compliance: Through implementation of this revision the Indian Point Emergency Plan maintains site compliance as follows:
Change 11moved the statement regarding protective action recommendations form the State and local offsite authorities section to the Shift Manager /ED section under a General Emergency. Indian Point is responsible for making these recommendations while the local offsite authorities are responsible for making protective action decisions for the general public health and safety in their respective counties.

10 CFR 50.47(b) (10) – Emergency Protective Actions (Changes 11 and 18)

- A range of public PARs is available for implementation during emergencies.

Site Compliance: Through implementation of this revision the Indian Point Emergency Plan maintains site compliance as follows:
Change 11 discusses adding the protective action recommendation of evacuation while change 18 discusses adding the protective action recommendation of sheltering as these terms were missing in these sections of the EPLAN. These protective action recommendations are not new as these are the standard at IPEC and in the industry for protective action recommendations however they were missed incorporating in past revisions of the EPLAN.

10 CFR 50.47(b)(14)—Drill and Exercise Program (Change 37)

- A drill and exercise program (including radiological, medical, health physics, and other program areas) is established.

Site Compliance: Through implementation of this revision the Indian Point Emergency Plan maintains site compliance as follows:
Change 37 makes the clarification that when conducting drills with the offsite agencies, a scenario may not include a release of radioactivity. It provides for the option in a scenario.

Previous NRC Commitments: During the Process Applicability Determination (PAD) review, the Licensing Research System and the NRC Orders were reviewed for potential NRC Commitment changes as a result of this revision. There were no identified conflicts with the Emergency Plan revision.

Procedure/Document Number: IPEC-EP	Revision: 17-02 (MERLIN Revision 21)
Equipment/Facility/Other: Indian Point Energy Center (IPEC)	
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Part IV. Description of Emergency Plan Planning Standards, Functions and Program Elements Affected by the Proposed Change:

10 CFR 50.47(b)(5)—Emergency Notifications (Changes 11)

Function

- Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway.

Program Elements:

Appendix E to 10 CFR 50, Sections IV.D.1 and IV.D.3 provides supporting requirements.

Informing criteria appear in Section II.E of NUREG -0654 and in the Emergency Plan.

10 CFR 50.47(b) (10) – Emergency Protective Actions (Changes 11 and 18)

Function

- A range of public PARs is available for implementation during emergencies.

Program Elements:

Appendix E to 10 CFR 50 does not contain any support requirements. Informing criteria appear in NUREG-0654 in Sections II.J.1–8, Section II.J.10, and Supplement 3 and in the Emergency Plan.

10 CFR 50.47(b)(14)—Drill and Exercise Program (37)

Function:

- A drill and exercise program (including radiological, medical, health physics, and other program areas) is established.

Program Elements:

Sections IV.F.1–2 of Appendix E to 10 CFR Part 50 provides supporting requirements.

Informing criteria appear in Section II.N of NUREG-0654 and in the Emergency Plan.

Procedure/Document Number: IPEC-EP	Revision: 17-02 (MERLIN Revision 21)
Equipment/Facility/Other: Indian Point Energy Center (IPEC)	
Title: Indian Point Energy Center Emergency Plan	

Part V. Description of Impact of the Proposed Change on the Effectiveness of Emergency Plan Functions:

Change 11 - Moved statement from State and local to Shift Manager/ED. Shift Manager/Ed make the recommendations while the State and counties make the decisions for protective actions. In addition, added evacuation as another method of protective action that was missing in this sentence but it is provided elsewhere in the Emergency Plan.
The change does not represent a reduction in the effectiveness of the emergency plan, continues to meet planning standard 10 CFR 50.47(b) (5) and 10CFR50 Appendix E Sections IV.D.1 and IV.D.3 and can be incorporated without prior NRC approval because the change corrects actual responsibilities for making protective action recommendations with respect to the Shift Manager/ Emergency Director and the local offsite authorities. In addition, the protective action recommendation of evacuation is added in the sentence to ensure that the Emergency Plan accurately and consistently describes the protective action recommendations as documented within the Emergency Plan document.

Change 18 - The protective action of sheltering was missing from this sentence but it is provided elsewhere in the Emergency Plan.
The change does not represent a reduction in the effectiveness of the emergency plan, continues to meet planning standard 10 CFR 50.47(b) (5) and (10) and 10CFR50 Appendix E Sections IV.D.1, IV.D.3, II.J.1-8, II.J.10 and can be incorporated without prior NRC approval because the protective action recommendation of sheltering is added in the sentence to ensure that the Emergency Plan accurately and consistently describes the protective action recommendations as documented within the Emergency Plan document.

Change 37 - This makes the clarification that when conducting drills with the offsite agencies given that a scenario may not include a release of radioactivity. It provides for the option in a scenario.
The change does not represent a reduction in the effectiveness of the emergency plan, continues to meet planning standard 10 CFR 50.47(b) (14) and 10CFR50 Appendix E Sections IV.F.1-2 and can be incorporated without prior NRC approval because the change does not alter or modify the conduct of drills and exercises. It simply allows for additional options for scenario development.

Conclusion Regarding Impact
The proposed changes to the IPEC EPLAN Rev 17-02, continue to meet the planning standards outlined in 10 CFR 50.47(b) (5) and 10 CFR 50.47(b)(10) and 10 CFR 50.47(b)(14). This revision does not represent a reduction in effectiveness to the IPEC Emergency Plan and can be incorporated without prior NRC approval.

Part VI. Evaluation Conclusion

Answer the following questions about the proposed change.

1.	Does the proposed change comply with 10 CFR 50.47(b) and 10 CFR 50 Appendix E?	☒YES ☐ NO
2.	Does the proposed change maintain the effectiveness of the emergency plan (i.e., no reduction in effectiveness)?	☒YES ☐ NO
3.	Does the proposed change constitute an emergency action level scheme change?	☐YES ☒ NO

If questions 1 or 2 are answered NO, or question 3 answered YES, reject the proposed change, modify the proposed change and perform a new evaluation or obtain prior NRC approval under provisions of 10 CFR 50.90. If questions 1 and 2 are answered YES, and question 3 answered NO, implement applicable change process(es). Refer to step 5.8[8].

Procedure/Document Number: IPEC-EP	Revision: 17-02 (MERLIN Revision 21)
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Title: Indian Point Energy Center Emergency Plan	

Part VII. Signatures		
Preparer Name (Print) Antonio Iraola	Preparer Signature	Date: 11/17/17
(Optional) Reviewer Name (Print) N/A	Reviewer Signature	Date:
Reviewer Name (Print) Timothy Garvey Nuclear EP Project Manager	Reviewer Signature	Date: 11/17/17
Approver Name (Print) Frank Mitchell Manager, Emergency Preparedness or designee	Approver Signature	Date: 11/17/17

Procedure/Document Number: IPEC-EP	Revision: 17-02 (MERLIN Revision 21)
Equipment/Facility/Other: Indian Point Energy Center (IPEC)	
Title: Indian Point Energy Center Emergency Plan	

Part I. Description of Activity Being Reviewed (This is generally changes to the emergency plan, EALs, EAL bases, etc. – refer to step 3.0[6]):

The activity being reviewed is a revision to IPEC-EP-17-01 "Emergency Plan", to incorporate changes identified in the attached Revision Matrix.
Refer to attached Revision Matrix

Part II. Activity Previously Reviewed?	☐ YES	☒ NO
Is this activity fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report? If YES, identify bounding source document number/approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below: **Justification:** ☐ Bounding document attached (optional)	50.54(q)(3) Evaluation is NOT required. Enter justification below and complete Part VI.	Continue to next part

Part III. Applicability of Other Regulatory Change Control Processes

Check if any other regulatory change processes control the proposed activity.(Refer to EN-LI-100)

APPLICABILITY CONCLUSION

☒ If there are no other controlling change processes, continue the 50.54(q)(3) Screening.
☐ One or more controlling change processes are selected, however, some portion of the activity involves the emergency plan or affects the implementation of the emergency plan; continue the 50.54(q)(3) Screening for that portion of the activity. Identify the applicable controlling change processes below.
☐ One or more controlling change processes are selected and fully bounds all aspects of the activity. 50.54(q)(3) Evaluation is NOT required. Identify controlling change processes below and complete Part VI.

CONTROLLING CHANGE PROCESSES

10 CFR 50.54(q) Only

Part IV. Editorial Change	☐ YES	☒ NO
Is this activity an editorial or typographical change such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? **Justification:** **1,2,3,4,5,6,7,8,9,12,13,14,15,16,17, 19,20,21, 23,25,26, 31,33, and 34 per the attached revision matrix, are considered editorial changes per EN-AD-101.** **"NO" is checked because the procedure revision contains non-editorial changes per the attached revision matrix.**	50.54(q)(3) Evaluation is NOT required. Enter justification and continue to next part or complete Part VI as applicable.	Continue to next part

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Part V. Emergency Planning Element/Function Screen (Associated 10 CFR 50.47(b) planning standard function identified in brackets) Does this activity affect any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II?	
1. Responsibility for emergency response is assigned. [1]	☐
2. The response organization has the staff to respond and to augment staff on a continuing basis (24/7 staffing) in accordance with the emergency plan. [1]	☐
3. The process ensures that on shift emergency response responsibilities are staffed and assigned. [2]	☐
4. The process for timely augmentation of onshift staff is established and maintained. [2]	☐
5. Arrangements for requesting and using off site assistance have been made. [3]	☐
6. State and local staff can be accommodated at the EOF in accordance with the emergency plan. [3]	☐
7. A standard scheme of emergency classification and action levels is in use. [4]	☐
8. Procedures for notification of State and local governmental agencies are capable of alerting them of the declared emergency within 15 minutes after declaration of an emergency and providing follow-up notifications. [5]	☒
9. Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. [5]	☐
10. The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. [5]	☐
11. Systems are established for prompt communication among principal emergency response organizations. [6]	☐
12. Systems are established for prompt communication to emergency response personnel. [6]	☐
13. Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). [7]	☐
14. Coordinated dissemination of public information during emergencies is established. [7]	☐
15. Adequate facilities are maintained to support emergency response. [8]	☐
16. Adequate equipment is maintained to support emergency response. [8]	☐
17. Methods, systems, and equipment for assessment of radioactive releases are in use. [9]	☐
18. A range of public PARs is available for implementation during emergencies. [10]	☒
19. Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. [10]	☐
20. A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.[10]	☐
21. The resources for controlling radiological exposures for emergency workers are established. [11]	☐
22. Arrangements are made for medical services for contaminated, injured individuals. [12]	☐
23. Plans for recovery and reentry are developed. [13]	☐
24. A drill and exercise program (including radiological, medical, health physics and other program areas) is established. [14]	☐
25. Drills, exercises, and training evolutions that provide performance opportunities to develop,	☒

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maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses. [14]	
26. Identified weaknesses are corrected. [14]	☐
27. Training is provided to emergency responders. [15]	☐
28. Responsibility for emergency plan development and review is established. [16]	☐
29. Planners responsible for emergency plan development and maintenance are properly trained. [16]	☐

APPLICABILITY CONCLUSION

☐ If no Part V criteria are checked, a 50.54(q)(3) Evaluation is NOT required; document the basis for conclusion below and complete Part VI.

X If any Part V criteria are checked, complete Part VI and perform a 50.54(q)(3) Evaluation.

BASIS FOR CONCLUSION

Change 10- During the second 2015 revision of the EPLAN (Rev. 15-02), the letters of agreement were removed from the EPLAN and have been maintained in the Emergency Planning files. This change was 50.54q evaluated during the 15-02 revision. The wording "contained" in this paragraph was missed during the review and is now being changed to 'listed". This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 22 and 24- The Alternate Emergency Operations Facility (AEOF) was relocated from White Plains, NY to Fishkill, NY given the sale of the White Plains Building and termination of the lease. A separate 50.54q screen and evaluation was completed in 2017 to address this move. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 27- Added an asterisk to refer to statement about doses to lens of eye and other organs/areas of the body. Revised wording to clarify that 5 Rem refers to TEDE dose. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 28- Revises wording for consistency with Entergy Fleet emergency exposure authorization Form EP-4-ALL.This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 29- Revises wording for consistency with Entergy Fleet emergency exposure authorization Form EP-4-ALL. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 30- Revises wording for consistency with Entergy Fleet emergency exposure policy. Any emergency response action requiring greater exposure than 25 Rem should be limited to only volunteers. Individuals over forty-five years of age are considered first. Females who declare pregnancy are restricted to 10CFR 20.1208 limits. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

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Change 32- Section 2.a and Section 2.f repeat the same information regarding the Corporate Emergency Center Manager. The new version combines the two sections into one with no loss of information. Section 2.f can be deleted in the new version. In addition, removed the semi-colon and replaced it with a period after the word activities. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 35 - Section 2.a and Section 2.f repeat the same information regarding the Corporate Emergency Center Manager. The new version combines the two sections into one with no loss of information. This change deletes Section 2.f. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 36- Changed the terminology from TLDs to DLRs. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 38- This sentence was enhanced to make clear that each change to the letters of agreement should be reviewed carefully to evaluate its impact, if any, to the planning standards. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 39- Updating only the Recovery procedure number and subject addressed. 50.54Q3 completed 3/28/17 for the replacement of IP-EP-610 with EN-EP-613. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 40- Changed wording from RMT- Radiation Monitoring Team to OMT - Offsite Monitoring Team made to be consistent with current terminology in Plan. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 41- Deleted wording TAG- Technical Assessment Group because group no longer exists and is not referenced in the Plan. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 42- Security Code Yellow -This security-related terminology is not referenced in other portions of the E-Plan and does not belong. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 43- Security Code Orange -This security-related terminology is not referenced in other portions of the E-Plan and does not belong. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

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Change 44- Security Code Red -This security-related terminology is not referenced in other portions of the E-Plan and does not belong. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 45- No ETE data was revised, added or deleted for the 2017 E-Plan revision. KLD ETE documents were more clearly defined and referenced in the revised text. There are two (2) ETE reports that provide information for this Appendix – a 2012 ETE Report and a 2014 ETE Addendum. The revised text more clearly specifies from which document the information is coming from or referenced from. The two (2) ETE documents are more specifically detailed to include proper titles, KLD report numbers and dates of issuance. The additional ETE regions from the 2014 ETE Addendum are also now discussed. Updated ETE data was also obtained from the 2014 ETE Addendum and contained in the 2016 E-Plan revision. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 46- Updated ETE data was obtained for the 2014 ETE Addendum and was included in the 2016 E-Plan revision but now only cited in the revised text. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 47- Revised text specifies from which document information is coming from. Updated ETE data was obtained for the 2014 ETE Addendum and was included in the 2016 E-Plan revision but now only cited in the revised text. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Change 48- The document title and issuance date was corrected. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

Emergency Planning Element 8 for Change 11, Element 18 for Changes (11 and 18) and Element 25 for Change 37 of this form are potentially affected as described in the Revision Matrix.

A 10CFR50.54 (q) evaluation will be performed to determine if the effectiveness of the IPEC Emergency Plan is reduced and prior NRC approval is required

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Part VI. Signatures:		
Preparer Name (Print) Antonio Iraola Sr. Emergency Planner	Preparer Signature	Date: 11/17/17
(Optional) Reviewer Name (Print) N/A Sr. Emergency Planner	Reviewer Signature	Date:
Reviewer Name (Print) Timothy Garvey Nuclear EP Project Manager	Reviewer Signature	Date: 11/17/17
Approver Name (Print) Frank Mitchell Manager, Emergency Planning or designee	Approver Signature	Date: 11/17/17

I. OVERVIEW PAD Rev. #: _0____

Facility: Indian Point Energy Center (IPEC)

Proposed Activity / Document: IPEC Emergency Plan **Change/Rev. #: 17-02 (Merlin Rev. 21)**

Description of Proposed Activity: Revision to IPEC Emergency Plan

II. DOCUMENT REVIEW METHOD

Provide the requested information for each item below.

1. **For documents available electronically:**

   a. **List search engine or documents searched, and keywords used:**
   U2/U3 Technical Specifications, U2/U3 UFSARs, NRC Orders, LRS Commitments, and the IPEC Emergency Plan: Keywords: Emergency, Plan, Emergency Plan.

   b. **List relevant sections of controlled electronic documents reviewed:**
   All Licensing Basis Document sections were searched electronically: U2/U3 Technical Specifications, U2/U3 UFSARs, NRC Orders, LRS Commitments, and the IPEC Emergency Plan. Review determined no relevant hits and no impact from proposed changes.

2. **Documents reviewed manually (hardcopy):**
   None

3. **For those documents that are not reviewed either electronically or manually, use the specific questions provided in Sections III and IV of Attachment 9.2 of EN-LI-100 as needed. Document, below, the extent to which the Attachment 9.2 questions were used.**

   Reviewed complete Att. 9.2 of EN-LI-100 Revision 20. Emergency Plan (10 CFR 50.54(q) / (EN-EP-305) section is applicable due to change being controlled by 10 CFR 50.54 (q).

III. PROCESS REVIEW

Does the proposed activity affect, invalidate, or render incorrect, OR have the potential to affect, invalidate, or render incorrect, information contained in any of the following processes? Contact Program Owner if needed. Associated regulations and procedures are identified with each process below.

PROCESS (Regulations / Procedures)	YES	NO	REVIEW RESULTS
Chemistry / Effluents	☐	☒	
Radwaste / Process Control Program (PCP) (EN-RW-105 or contact the Radiation Protection Dept.)	☐	☒	
Radiation Protection / ALARA (10 CFR 20 / EN-RP-110 or contact the Radiation Protection Dept.)	☐	☒	
Inservice Inspection Program (10 CFR 50.55a / EN-DC-120, -333, -342, -351, -352)	☐	☒	
Inservice Testing Program (10 CFR 50.55a / EN-DC-332)	☐	☒	
Maintenance Rule Program (10 CFR 50.65 / EN-DC-203, -204, -205, -206, -207)	☐	☒	
Containment Leakage Rate Testing (Appendix J) Program (10 CFR 50 Appendix J / EN-DC-334)	☐	☒	

PROCESS (Regulations/Procedures)	YES	NO	N/A	REVIEW RESULTS
FLEX Program (NRC Order EA-12-49/FLEX Program) (10 CFR 50.59 / Contact Design Engineering) NOTE: The date for individual site implementation of the FLEX Program is not the same for all sites. All sites are required to implement a FLEX program per NRC Order EA-12-49. N/A may be used for this process by sites that have not completed implementation of a FLEX program. Contact Design Engineering if further assistance is needed.	☐	☒	☐	

IF any box is checked "Yes," THEN contact the appropriate department to ensure that the proposed change is acceptable and document the results in the REVIEW RESULTS column.

IV. LICENSING BASIS DOCUMENT REVIEW

Does the proposed activity affect, invalidate, or render incorrect, OR have the potential to affect, invalidate, or render incorrect, information contained in any of the following Licensing Basis Document(s)? Contact LBD Owner if needed. Associated regulations and procedures are identified with each Licensing Basis Document below.

LICENSING BASIS DOCUMENTS (Regulations / Procedures)	YES	NO	REVIEW RESULTS OR SECTIONS AFFECTED OR LBDCR #
Quality Assurance Program Manual (QAPM) [10 CFR 50.54(a), 10 CFR 50 Appendix B / EN-QV-104]	☐	☒	
Fire Protection Program (FPP) [Includes the Fire Safety Analysis/Fire Hazards Analysis (FSA/FHA)] OL Condition, 10 CFR 50.48 / EN-DC-128)	☐	☒	
Emergency Plan (Includes the On-Shift Staffing Analysis) [10 CFR 50.54(q) / 10 CFR 50.47 / EN-EP-305]	☒	☐	Emergency Plan: 10 CFR 50.54(q) screen and evaluation completed.
Environmental Protection Plan (Appendix B of the OL, Environmental Evaluation / EN-EV-115, EN-EV-117, EN-LI-103)	☐	☒	
Security Plan [10 CFR 50.54(p) / EN-NS-210 or contact site Security Dept.]	☐	☒	
Cyber Security Plan [10 CFR 50.54 (p) /10 CFR 73.54 / EN-IT-103 or EN-IT-103-01]	☐	☒	
Operating License (OL) / Technical Specifications (TS) (10 CFR 50.90 / EN-LI-103)	☐*	☒	
TS Bases (10 CFR 50.59 / EN-LI-100 / EN-LI-101)	☐	☒	
Technical Requirements Manual (TRM) (Including TRM Bases) (10 CFR 50.59 / EN-LI-100 / EN-LI-101)	☐	☒	
Core Operating Limits Report (COLR), and Pressure and Temperature Limits Report (PTLR) (TS Administrative Controls, EN-LI-113, EN-LI-100, EN-LI-101)	☐	☒	
Offsite Dose Calculation Manual (ODCM) (TS Administrative Controls or 10 CFR 50.59 / EN-LI-113 or EN-LI-100 / EN-LI-101)	☐	☒	
Updated Final Safety Analysis Report (UFSAR) (10 CFR 50.71(e) / EN-LI-113, EN-LI-100, EN-LI-101)	☐	☒	
Storage Cask Certificate of Compliance (10 CFR 72.244 / EN-LI-113)	☐*	☒	
Cask FSAR (CFSAR) (including the CTS Bases) (10 CFR 72.70 or 72.248 / EN-LI-113, EN-LI-100,EN-LI-112)	☐	☒	
10 CFR 72.212 Evaluation Report (212 Report) (10 CFR 72.48 / EN-LI-100, EN-LI-112)	☐	☒	
NRC Orders (10 CFR 50.90 / EN-LI-103 or as directed by the Order)	☐*	☒	
NRC Commitments and Obligations (EN-LI-110)	☐*	☒	
Site-Specific CFR Exemption (10 CFR 50.12, 10 CFR 55.11, 10 CFR 55.13, 10 CFR 72.7)	☐*	☒	

*Contact the site Regulatory Assurance Department if needed.

IF any box is checked "Yes," THEN ensure that any required regulatory reviews are performed in accordance with the referenced procedures. Prepare an LBDCR per procedure EN-LI-113, as required, if a LBD is to be changed, and document any affected sections or the LBDCR #. Briefly discuss how the LBD is affected in Section VII.A.

V. 10 CFR 50.59 / 10 CFR 72.48 APPLICABILITY

Can the proposed activity be dispositioned by one or more of the following criteria? Check the appropriate box (if any).

☐	**An approved, valid 50.59/72.48 Evaluation covering associated aspects of the proposed activity already exists. Reference 50.59/72.48 Evaluation # _____ (if applicable) or attach documentation. Verify the previous 50.59/72.48 Evaluation remains valid.**
☐	**The NRC has approved the proposed activity or portions thereof in a license amendment or a safety evaluation, or is being reviewed by the NRC in a submittal that addresses the proposed activity. Implementation of change requires NRC approval. Reference the approval document or the amendment in review.:** _____
☒	**The proposed activity is controlled by one or more applicable regulations.** **Examples of programs controlled by regulations that establish specific criteria are:** • Maintenance Rule (50.65) (EN-DC-203) • Quality Assurance Program (10 CFR 50 Appendix B) • Security Plan [50.54(p)] (EN-NS-210) • Cyber Security Plan [73.54] (EN-IT-103) • Emergency Plan [50.54(q)] (EN-EP-305) • Fire Protection Program (operating license condition) • Inservice Inspection Program (50.55a) (EN-DC-351, -352) • Inservice Testing Program (50.55a) (EN-DC-332) **See NEI 96-07 Section 4.1 for additional guidance on specific regulations.** **Reference the controlling specific regulation(s): 10CFR50.54(q)**

IF the entire proposed activity can be dispositioned by one of the criteria in Section V, THEN 50.59 and 72.48 Screenings are not required. Proceed to Section VII and provide basis for conclusion in Section VII.A.

Otherwise, continue to Section VI to perform a 50.59 and a 72.48 Screening, or perform a 50.59 and/or 72.48 Evaluation in accordance with EN-LI-101 and/or EN-LI-112.

Changes to the IPEC Unit 1 Decommissioning Plan are to be evaluated in accordance with the 50.59 process, as allowed by the NRC in a letter to IPEC dated January 31, 1996. [Meriin Document ID: RA-96-014]

VI. 50.59 / 72.48 SCREENING REVIEW (All proposed activities must be evaluated to determine if 50.59, 72.48 or both apply. Check the applicable boxes)

VI.A 50.59 SCREENING

☐	50.59 applies to the proposed activity, and all of the following 10 CFR 50.59 screening criteria are met; therefore, the proposed activity requires no further 50.59 review. The proposed activity: • Does not adversely affect the design function of an SSC as described in the UFSAR; AND • Does not adversely affect a method of performing or controlling a design function of an SSC as described in the UFSAR; AND • Does not adversely affect a method of evaluation that demonstrates intended design function(s) of an SSC will be accomplished as described in the UFSAR; AND • Does not involve a test or experiment not described in the UFSAR. Document the basis for meeting the screening criteria in Section VI.C, then proceed to Section VII. [10 CFR 50.59(c)(1)]
☐	The proposed activity does not meet the above criteria. Perform a 50.59 Evaluation in accordance with EN-LI-101. Attach a copy of the Evaluation to this form and proceed to Section VII.

VI.B 72.48 SCREENING

☐	72.48 applies to the proposed activity, and all of the following 10 CFR 72.48 screening criteria are met; therefore, the proposed activity requires no further 72.48 review. The proposed activity: • Does not adversely affect the design function of an SSC as described in the CFSAR; AND • Does not adversely affect a method of performing or controlling a design function of an SSC as described in the CFSAR; AND • Does not adversely affect a method of evaluation that demonstrates intended design function(s) of an SSC will be accomplished as described in the CFSAR; AND • Does not involve a test or experiment not described in the CFSAR. Document the basis for meeting the screening criteria in Section VI.C, then proceed to Section VII. [10 CFR 72.48(c)(1)]
☐	The proposed activity does not meet the above criteria. Perform a 72.48 Evaluation in accordance with EN-LI-112. Attach a copy of the Evaluation to this form and proceed to Section VII.

VI.C BASIS

Provide a clear, concise basis for determining the proposed activity may be screened out such that a third-party reviewer can reach the same conclusions. Identify the relevant design function, as appropriate. Refer to NEI 96-07 Section 4.2 for guidance. Refer to NEI 12-06 Section 11.4 for guidance regarding FLEX. Provide supporting documentation or references as appropriate.

Go to Section VII.A General Review Comments below.

VII. REGULATORY REVIEW SUMMARY

VII.A GENERAL REVIEW COMMENTS **(Provide pertinent review details and basis for conclusions if not addressed elsewhere in form.)**

The Indian Point Energy Center Emergency Plan (Plan), Revision 17-02 (Merlin Revision 21), describes the emergency preparedness program for the Indian Point Energy Center 1, 2, and 3 Generating Stations. The Plan outlines the basis for response actions that would be implemented in an emergency. This revision incorporates changes throughout the document. In all cases, no change has resulted in a reduction in effectiveness of the Plan. Specific details regarding each change are included in the 10 CFR 50.54(q) Screen and Evaluation and associated Revision Matrix. The overall 10 CFR 50.54(q) Evaluation conclusion determined that the proposed changes to the IPEC Emergency Plan, Revision 17-02, continues to meet the planning standards outlined in 10 CFR 50.47(b). This revision does not represent a reduction in effectiveness to the IPEC Emergency Plan and can be incorporated without prior NRC approval. See completed 10 CFR 50.54(q) Screen and Evaluation.

VII.B CONCLUSIONS

1.	**Is a change to an LBD being initiated?**	☒	**Yes**
	IF "Yes," THEN enter the appropriate change control process and include this form with the change package.	☐	**No**
2.	**Is a 10 CFR 50.59 Evaluation required?**	☐	**Yes**
	IF "Yes," THEN complete a 50.59 Evaluation in accordance with EN-LI-101 and attach a copy to the change activity.	☒	**No**
3.	**Is a 10 CFR 72.48 Evaluation required?**	☐	**Yes**
	IF "Yes," THEN complete a 72.48 Evaluation in accordance with EN-LI-112 and attach a copy to the change activity.	☒	**No**

VIII. SIGNATURES [1]

Preparer: A. Iraola/ /Entergy/ Emergency Planning/ 11/13/17
Name (print) / Signature / Company / Department / Date

Reviewer: A. Ambrose/ /Entergy/ Emergency Planning/ 11/13/17
Name (print) / Signature / Company / Department / Date

Process Applicability Exclusion

Site Procedure Champion or Owner:
Name (print) / Signature / Company / Department / Date

Upon completion, forward this PAD form to the appropriate organization for record storage. If the PAD form is part of a process that requires transmittal of documentation, including PAD forms, for record storage, then the PAD form need not be forwarded separately.

[1] The printed name, company, department, and date must be included on the form. Signatures may be obtained via electronic processes (e.g., PCRS, ER processes, Asset Suite signature), manual methods (e.g., ink signature), e-mail, or telecommunication. If using an e-mail, attach it to this form.

ATTACHMENT 7.1 — CHANGE IMPACT CHECKLIST

Sheet 1 of 3

This Checklist assists the change lead with identifying the specific impacts on people and processes. The checklist provides details of specific actions required to implement the change. The Change Owner /Lead completes the Change Impact Checklist to identify the needed forms identified in Section IV for the Impact Level of the change. Additionally, the Change Owner/Lead uses additional forms and references identified in section II to analyze the change. This form is completed by following Section 3.3 in the procedure. See section 3.8 for documentation requirements.

If the change is a personnel change ONLY, use Attachment 7.4.

Section I - Define the Change: Reference 3.3[1]			
Title of Change:	**Emergency Plan Revision 17-02**		
Change Owner:	**F. Mitchell**	**Change Sponsor:**	**F. Mitchell**
Change Lead:	**A. Iraola**	**Project Manager:**	**N/A**
What is the Change? *(Provide a brief description of what will be different and change scope.)*			
Revised the Indian Point Emergency Plan as part of the annual EPLAN review.			
Who and What groups/departments are impacted by the change? *(Identify employees/groups, programs, processes, regulations, equipment, facilities, etc. affected by the change.)*			
Emergency Planning			
Why is the Change necessary? *(Provide a reason for the change, the benefit gained or consequence avoided.)*			
The change was necessary to update the EPLAN with the latest review findings.			
When is the proposed or desired Date for Change? *(Identify timeline or effective date for change.)*			
December 14, 2017			
Where is the Change being Implemented? *(check as applicable; double click box to select)*			
☐ Fleet-Wide ☐ Echelon ☐ White Plains ☐ ANO ☐ GGNS ☒ IPEC ☐ PAL ☐ PIL ☐ RBS ☐ VY ☐ WF3 ☐ Other _____			
What SHOULD NOT be affected as a result of this change? *(Identify any areas affected employees/groups might likely assume would be affected, but are not included.)*			

Yes	No	Unsure	**Section II - Impact Evaluation:** Reference 3.3[2]	Notes
☐	☒	☐	Impact Nuclear, Radiological, Industrial Safety or Equipment Reliability?	
☒	☐	☐	Impact Licensing: FSAR/Technical Specifications/QA Program/Commitments? *(i.e., ANSI, 50.59, 50.54, etc.) Perform evaluation in accordance with EN-LI-100*	
☒	☐	☐	Impact E-Plan, Security Plan, QA Manual? *Perform evaluation in accordance with EN-LI-100*	
☐	☒	☐	Impact to Procedures/Policies? *(e.g., non-editorial changes, change that affects multiple procedures, etc.)*	
☐	☒	☐	Impact scheduled Plant Work Activities or Operating Schedule?	
☐	☒	☐	Impact computer programs/applications software? *If Yes, evaluate need for an SQA- Reference EN-IT-104.*	
☐	☒	☐	Impact Accredited Training Job Task or Qualifications of Personnel? *If Yes, an action **must** be initiated* in accordance with *EN-TQ-201. Contact Training management for additional information.*	
☐	☒	☐	Impact ANSI 3.1 Qualification Requirements (See EN-HR-137) *Perform evaluation in accordance with EN-HR-137*	
☐	☒	☐	Impact organizational responsibility, e.g., require transfer of responsibility from one organization to another? *If Yes, reference EN-HR-134 during change planning. Note: transferring responsibilities between organizations may impact the QAPM. Evaluate in accordance with applicable Licensing (EN-LI) procedures.*	
☐	☒	☐	Impact resources or physical workload in other departments or organizations? *(e.g., work activities, process time, employee schedules?)*	
☐	☒	☐	Impact contractor resources which are working under Entergy procedures? (e.g., contractors working under Entergy procedures require additional notification beyond normal communication channels)	
☐	☒	☐	Impact of other Areas, Processes or Facilities to support the change? (Internal or External?)	
☐	☒	☐	Potential for new equipment or system not to function properly at implementation? Consider use of *Contingency/Prevention Worksheet, Attachment 7.6*	
☐	☒	☐	Change requires specific skills, experience and subject matter experts for successful plan development and implementation? *Use Team Skill Matrix, Attachment 7.5*	
☐	☒	☐	Change involves a temporary or permanent employee change due to: Promotion, Transfer, New Hire, Resignation, Retirement, Staffing Restructuring or Termination Leave of Absence, Medical Leave or Temporary Work Assignment. *Use Personnel Change Checklist, Attachment 7.4*	

ATTACHMENT 7.1 CHANGE IMPACT CHECKLIST
SHEET 3 OF 3

Section III – Identify the Change Impact Level: (Reference 3.3[3])	Low	Medium	High	
Refer to Section 3.3[3] for guidance.	X			

Checked "Yes" to any of the above questions in Section II? Ensure all "Yes" responses were factored into the impact level evaluation.
Checked "Unsure" to any of the above questions in Section II? Review all notes and evaluate for followup actions.

Include any incomplete followup actions in the implementation plan.

SECTION IV – CHANGE MANAGEMENT PROCESS STEPS BY IMPACT TYPE (*FOLLOW THE PROCEDURE GUIDANCE IDENTIFIED BELOW FOR THE IMPACT LEVEL OF THE CHANGE*)

PROCESS	LOW	MEDIUM	HIGH	
ASSIGN CHANGE ROLES (REF. 3.3[5])	CHANGE OWNER, CHANGE LEAD	SPONSOR, CHANGE OWNER, CHANGE LEAD	SPONSOR, CHANGE OWNER, CHANGE LEAD, PROJECT MANAGER (OPT.)	SPONSOR, CHANGE OWNER, CHANGE LEAD, PROJECT MANAGER
ANALYZE THE CHANGE (REF. 3.4)	DEVELOP COMMUNICATIONS	ATT. 7.2 ATT. 7.4 (OPT)	ATT. 7.2 (FLEET AND SITE LEVEL) ATT. 7.4 (OPT) RESOURCE-TO-WORKLOAD RATIO ANALYSIS (3.4[1](G))	
PLAN THE CHANGE (REF. 3.5)		ATT. 7.3	ATT. 7.3 (FLEET AND SITE LEVEL) ATT. 7.6 ATT. 7.7 (PLAN ACTIONS FOR EFFECTIVENESS REVIEW)	
IMPLEMENT THE CHANGE (REF. 3.6)	IMPLEMENT & COMMUNICATE CHANGE	ATT. 7.3 COMPLETED	ATT. 7.3 COMPLETED (FLEET AND SITE LEVEL)	
REVIEW THE CHANGE (REF. 3.7)		ATT. 7.7 (OPT) ATT. 7.8 (OPT)	ATT. 7.7 ATT. 7.8	
DOCUMENT THE CHANGE (REF. 3.8)	DEPT STORED	PCRS (OPT)	PCRS (ATT. 7.1, ATT. 7.2, ATT. 7.3, ATT. 7.6, ATT. 7.7)	

Concurrence of Phase 1 Review Completion for Major and High Impact Changes: (3.3[6])		
ROLE	NAME	DATE
CHANGE OWNER/LEAD	F.MITCHELL/A. IRAOLA	12/4/17
SPONSOR	F. MITCHELL	12/4/17
GOVERNANCE OWNER		
SITE PROCESS OWNER		

ATTACHMENT 10.2 IPEC PROCEDURE REVIEW AND APPROVAL

Procedure Title: Emergency Plan

Procedure No. IPEC-EP Existing Rev: 17-01 New Rev: 17-02 DRN/EC No: 17-01871

Procedure Activity (MARK Applicable)	☐ Converted To IPEC, Replaces:	Temporary Procedure Change (MARK Applicable)
☐ NEW PROCEDURE ☐ GENERAL REVISION ☒ PARTIAL REVISION ☐ EDITORIAL REVISION ☐ VOID PROCEDURE ☐ SUPERSEDED	Unit 1 Procedure No. Unit 2 Procedure No: Unit 3 Procedure No:	☐ EDITORIAL Temporary Procedure Change ☐ ADVANCE Temporary Procedure Change ☐ CONDITIONAL Temporary Procedure Change Terminating Condition:
☐ RAPID REVISION	Document in Microsoft Word: ☐ Yes ☐ No	☐ VOID DRN/TPC No(s):

Revision Summary ☐ N/A - See Revision Summary page.

Refer to the attached summary of changes in the attached matrix.

Implementation Requirements

Implementation Plan? ☐ Yes ☒No Formal Training? ☐ Yes ☒No Special Handling? ☐ Yes ☒No

RPO Dept: Emergency Planning Writer: (Print Name/Ext/Sign): A. Iraola/x 7704 12/4/17

Review and Approval (Per Attachment 10.1, IPEC Review And Approval Requirements)

1. ☒ Technical Reviewer: F. Mitchell / 12/4/17
(Print Name/ Signature/ Date)

2. ☐ Cross-Disciplinary Reviewers:

Dept: _____ Reviewer: _____
Print Name/ Signature/ Date)

Dept: _____ Reviewer: _____
Print Name/ Signature/ Date)

3. ☒ RPO- Responsibilities/Checklist: F. Mitchell / 12/4/17
(Print Name/ Signature/ Date)

☒PAD required and is complete (PAD Approver and Reviewer qualifications have been verified)
☐ Previous exclusion from further LI-100 Review is still valid
☐ PAD not required due to type of change as defined in 4.6

4. ☐ Non-Intent Determination Complete: _____
(Print Name/ Signature/ Date)

NO change of purpose or scope
NO reduction in the level of nuclear safety
NO voiding or canceling of a procedure, unless requirements are incorporated into another procedure or the need for the procedure was eliminated
NO change to less restrictive acceptance criteria
NO change to steps previously identified as commitment steps
NO deviation from the Quality Assurance Program Manual
NO change that may result in deviations from Technical Specifications, FSAR, plant design requirements.

5. ☐ On-Shift Shift Manager/CRS: _____
(Print Name/ Signature/ Date)

6. ☐ User Validation: User: _____ Validator: _____

7. ☐ Special Handling Requirements Understood: _____
(Print Name/ Signature/ Date)

ATTACHMENT 9.1 LBDCR FORM
Sheet 1 of 3

(TYPICAL)

1. LBDCR INITIATION

Tony Iraola	Emergency Planning	7704	1,2,3	Dec.14, 2017	EPLAN 17-02
INITIATOR'S NAME *(print or type)*	DEPARTMENT	PHONE	UNIT	DATE	LBDCR #

DESCRIPTION OF THE CHANGE (Attach additional pages if necessary; may also reference PAD Form)
This new revision is due to the annual review of the EPLAN for 2017.

	LICENSING DOCUMENT(S) AFFECTED	AFFECTED SECTION/PAGE(S) *(Attach marked-up pages)*
☐	Operating License (OL)	
☐	Technical Specifications (TS)	
☐	Environmental Protection Plan (EPP)	
☐	Anti-Trust Conditions (Appendix of OL)	
☐	NRC Orders	
☐	Updated Final Safety Analysis Report (UFSAR)	
☐	TS Bases	
☐	Technical Requirements Manual (TRM) (including TRM Bases)	
☐	Quality Assurance Program Manual (QAPM)	
☐	Security Plan/Cyber Security Plan (CSP)	
☒	Emergency Plan (EP)	See attached matrix
☐	Offsite Dose Calculation Manual (ODCM)	
☐	Spent Fuel Storage Cask Final Safety Analysis Report (CFSAR)	
☐	Spent Fuel Storage Cask Certificate of Compliance (CoC)	
☐	Spent Fuel Storage Cask CoC Bases	
☐	10 CFR 72.212 Evaluation Report (212 Report)	
☐	Fire Protection Program (FPP)/Fire Hazards Analysis (FHA)	
☐	Core Operating Limits Report (COLR)	
☐	Other (Specify) _____	

ATTACHMENT 9.1 LBDCR FORM
Sheet 2 of 3

METHOD(S) ALLOWING THE CHANGE			
☒	**PAD Review** (Attach a copy)	☐	**10 CFR 50.48 / EN-DC-128 Review** (Attach a copy)
☐	**10 CFR 50.59 Evaluation** (Attach a copy)	☒	**10 CFR 50.54 Review** (Attach a copy)
☐	**10 CFR 72.48 Evaluation** (Attach a copy)	☐	**Environmental Evaluation** (Attach a copy)
☐	**Approved NRC Change** (Attach a copy of NRC Letter or reference NRC letter number)	☐	**Editorial Change** (LBDs controlled under 50.59 or 72.48, only)
☐	**NRC Approval is Required**	☐	**Other Approval** (Attach a copy of supporting documents)
☐	**"UFSAR-only" Change (NEI 98-03)** **Check the appropriate box below:** ☐ **Reformatting** ☐ **Replacing Detailed Drawing** ☐ **Referencing other Documents** **Check the appropriate box below and provide a basis for removing information, if applicable:** ☐ **Removing Excessive Detail** ☐ **Removing Obsolete Information** ☐ **Removing Redundant Information** ☐ **Removing Commitments** **Removal Basis:**		

II. LBDCR IMPLEMENTATION[1]

ACTIONS SUPPORTING IMPLEMENTATION			
LBD SECTION	REQUIRED ACTIONS		ACTION TAKEN OR TRACKING METHOD
	ACTION	RESP. DEPT	
See attached matrix	Issuance of the EPLAN scheduled for Dec.14, 2017	EP	Entry into Merlin on Dec.14, 2017

ATTACHMENT 9.1 LBDCR FORM
Sheet 3 of 3

III. LBDCR REVIEW AND APPROVAL[1]

REVIEW AND APPROVAL of LBDCR *(see Attachment 9.2)*		
Department	**Approved[2]**	**Date**
UFSAR Section Owner[3]	N/A	
Peer Review[4]	A. Iraola /	12/4/17
LBD Owner	F. Mitchell /	12/4/17

1 Add additional table rows as needed.

2 The printed name should be included on the form when using electronic means for signature. Signatures may be obtained via electronic processes (e.g., PCRS, ER processes, Asset Suite signature), manual methods (e.g., ink signature), e-mail, or telecommunication. If using an e-mail, attach it to this form.

3 UFSAR Section Owners should refer to EN-LI-113-01, "Updated Final Safety Analysis Report Change Process," for review expectations. N/A if change does not update the UFSAR.

4 Administrative peer review intended to verify changes have been incorporated correctly into revised LBD prior to issuance.

CHANGE MANAGEMENT NOTICE
IPEC EPLAN Rev. 17-02 (Merlin Rev. #21)

WHO is affected?

IPEC Emergency Planning Department Personnel

WHAT is the change?

A total of 48 changes were made of which 48% were editorial along with minor program changes.

Please see the attached matrix for a summary of all the changes.

This revision is of "Low Risk/Complexity."

WHY is the change occurring?

The change is necessary to document a variety of editorial changes and minor program changes.

The change is occurring as part of the annual EPLAN review.

WHEN is the change effective?

December 14, 2017

CONTACTS:

Tony Iraola, Sr. Emergency Planner, x 7704

Frank Mitchell, EP Manager, x 5236

Attachment 9.1

Emergency Planning Document Change Checklist Form

(All sections must be completed, N/A or place a check on the line where applicable)

Section 1

Doc/Procedure Type:	Administrative ☐ Implementing ☐ EPLAN ☒ N/A ☐
Doc/Procedure No:	IPEC-EP
Doc/Procedure Title:	Indian point Emergency Center Emergency Plan
Corrective Action:	Yes ☐ No ☒ N/A ☐ CR#:_____

Section 2

Change Description

1. Ensure the following are completed, or are not applicable and are so marked:
   a. 50.54q ☒ N/A ☐
   b. EN-FAP-OM-023 ☒ N/A ☐
   c. IP-SMM- AD-102 ☒ N/A ☐
   d. OSRC ☒ N/A ☐

2. Transmittals are completed: ☐ N/A ☐ Date:12/14/2017

3. Ensure the proper revision is active in Merlin: ☒ N/A ☐

4. Approved doc/procedure delivered to Doc. Control for distribution: ☐ N/A ☐ Date: 12/11/2017

5. Position Binders updated: ☒ N/A ☐ Date: _____

6. Copy of EPDCC placed in EP file: ☒ N/A ☐ Date: 12/11/2017

7. Supporting documentation is submitted as a general record in MERLIN: ☒ N/A ☐ Date: 12/11/2017

8. Word files are moved from working drafts folder to current revision folder in the EP drive: ☐ N/A ☒ Date: 12/14/2017

IPEC Emergency Plan Revision 17-02 (Merlin Revision 21) REVISION MATRIX FINAL

Change No.	Page/Section	Previous Version (17-01)	New Version (17-02)	Editorial Change	Effect on 10 CFR 50.47(b) Planning Standards or NUREG-0654 program elements? Justify if NO.
1.	**COVER PAGE**	Rev 17-01	Rev 17-02	Yes	No- This is an editorial change to the Revision number and effective date. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
	Part 1:				
	Part 1: Ambrose				
2.	**List Of Effective Pages** **Page i**	17-01	17-02	Yes	No- This is an editorial change to the revision number. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

IPEC Emergency Plan Revision 17-02 (Merlin Revision 21) REVISION MATRIX FINAL

Change No.	Page/Section	Previous Version (17-01)	New Version (17-02)	Editorial Change	Effect on 10 CFR 50.47(b) Planning Standards or NUREG-0654 program elements? Justify if NO.
3.	**Table Of Contents** **APPENDIXES** **Page vii**	Appendix 2: Letters of Agreements	Appendix 2: Letters of Agreement	Yes	No- This is an editorial change to remove the "s". This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
	Part 2:				
	SECTION A: Grosjean				
4.	A.4 Page A-4	...Emergency Planning Department Manager...	...Manager of Emergency Preparedness..	Yes	No- This is an editorial change to the title in 2015. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
	SECTION B: Watts				

IPEC Emergency Plan Revision 17-02 (Merlin Revision 21) REVISION MATRIX FINAL

Change No.	Page/Section	Previous Version (17-01)	New Version (17-02)	Editorial Change	Effect on 10 CFR 50.47(b) Planning Standards or NUREG-0654 program elements? Justify if NO.
5.	5.c Page B-6	Specific Responsibilities	Specific responsibilities	Yes	No- This is an editorial change to remove the "R" as a capital. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
6.	5. d.5) Radiological Accident Assessment (Out-of-Plant and Offsite) Page B-7	The expertise for evaluating the radiological consequence of the accident is provided by the Dose Assessors and the Offsite Team Coordinator who function directly under authority of the Radiological Assessment Coordinator. These individuals ensure that sufficient monitoring activities are instituted, evaluate and assess the results, and apprise the Radiological Assessment Coordinator of all activities, results and recommendations.	The expertise for evaluating the radiological consequence of the accident is provided by the Dose Assessors and the Offsite Team Coordinator who function directly under authority of the Radiological Assessment Coordinator (RAC). These individuals ensure that sufficient monitoring activities are instituted, evaluate and assess the results and apprise the RAC of all activities, results and recommendations.	Yes	No- This is an editorial abbreviating the Radiological Assessment Coordinator. Also removed coma after results. These changes do not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

IPEC Emergency Plan Revision 17-02 (Merlin Revision 21) REVISION MATRIX FINAL

Change No.	Page/Section	Previous Version (17-01)	New Version (17-02)	Editorial Change	Effect on 10 CFR 50.47(b) Planning Standards or NUREG-0654 program elements? Justify if NO.
7.	9.a Ambulance Services Page B-10	...emergency medical services...	...Emergency Medical Services...	Yes	No- This is an editorial change to capitalize "E, M, S". This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
8.	Figures B-1.1, B-1.2a, B-1.2b, B-1.2c, B-1.2d, B1-3 Page B-12 thru B-17	Box surrounded figure, some lines are not straight.	Removed outer box and other graphic changes (straightened lines)	Yes	No- This is an editorial change removing the outer box and graphic changes (straightened lines). These changes do not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
9.	Figure B-1.3 Page B-17	Manager Emergency Planning	Manager Emergency Preparedness	Yes	No- This is an editorial change to the title in 2015. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
	SECTION C: Iraola				

IPEC Emergency Plan Revision 17-02 (Merlin Revision 21) REVISION MATRIX FINAL

Change No.	Page/Section	Previous Version (17-01)	New Version (17-02)	Editorial Change	Effect on 10 CFR 50.47(b) Planning Standards or NUREG-0654 program elements? Justify if NO.
10.	4. Other Assistance Page C-2	The availability of services has been ascertained and agreement letters are contained in Appendix 2.	The availability of services has been ascertained and agreement letters are listed in Appendix 2.	No	No- During the second 2015 revision of the EPLAN (Rev. 15-02), the letters of agreement were removed from the EPLAN and have been maintained in the Emergency Planning files. This change was 50.54q evaluated during the 15-02 revision. The wording "contained" in this paragraph was missed during the review and is now being changed to 'listed". This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
	SECTION D: Karsten/Delamater				

IPEC Emergency Plan Revision 17-02 (Merlin Revision 21) REVISION MATRIX FINAL

Change No.	Page/Section	Previous Version (17-01)	New Version (17-02)	Editorial Change	Effect on 10 CFR 50.47(b) Planning Standards or NUREG-0654 program elements? Justify if NO.
11.	**1. Emergency Classification** **General Emergency State and local offsite authorities...Emergency Plans:** **Page D-6**	Recommend, as a minimum, sheltering for 2 mile radius and 5 miles downwind and assess need to extend distances; consider advisability of evacuation (projected time available vs. Evacuation Time Estimates); **Note:** Currently under State and local offsite authorities... Emergency Plans and requires re-sequence the lettering in both sections a) to k) under Shift Manager/ED and a) to k) under State and local offsite authorities	A recommendation is made, as a minimum, sheltering or evacuation for 2 mile radius and 5 miles downwind and assess need to extend distances; consider advisability of evacuation (projected time available vs. Evacuation Time Estimates); **Note:** Moved under General Emergency letter c and re-sequenced the lettering in both sections to a) to l) under Shift Manager/ED and a) to j) under State and local offsite authorities	No	Yes – moved statement from State and local to Shift Manager/ED. Shift Manager/Ed make the recommendations while the State and counties make the decisions for protective actions. In addition, added evacuation as another method of protective action that was missing.
12.	**1. Emergency Classification** **General Emergency State and local offsite authorities...Emergency Plans:** **Page D-6**	**Note:** Currently under State and local offsite authorities... Emergency Plans and requires re-sequence the lettering in both sections a) to k) under Shift Manager/ED and a) to k) under State and local offsite authorities	**Note:** Moved under General Emergency letter c and re-sequenced the lettering in both sections to a) to l) under Shift Manager/ED and a) to j) under State and local offsite authorities	Yes	No – This re-sequencing of paragraphs was caused as a result made by the change in item 11. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change

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Change No.	Page/Section	Previous Version (17-01)	New Version (17-02)	Editorial Change	Effect on 10 CFR 50.47(b) Planning Standards or NUREG-0654 program elements? Justify if NO.
13.	General Emergency Page D-11	3. Other conditions exist which in the judgment of the Emergency Director warrant declaration of a General Emergency. 2nd Bullet in the list under General Emergency is 3,	2. Other conditions exist which in the judgment of the Emergency Director warrant declaration of a General Emergency. Renumber so the second bullet is 2	Yes	No – This corrects a typographical error in which the numbers in the list are not correct. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
	SECTION E: Karsten/Delamater				
14.	1.a.1) Page E-1	...Unusual Event threshold listed in the Section D...	...Unusual Event threshold listed in Section D...	Yes	No - the word "the" isn't grammatically correct in this sentence. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

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Change No.	Page/Section	Previous Version (17-01)	New Version (17-02)	Editorial Change	Effect on 10 CFR 50.47(b) Planning Standards or NUREG-0654 program elements? Justify if NO.
15.	1.b.1) Page E-2	...Alert condition listed in the Section D....	...Alert threshold listed in Section D....	Yes	No - the word "the" isn't grammatically correct in this sentence. Also replaced condition with threshold to be consistent with the other classification wording. These changes do not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
16.	1.c.1) Page E-3	...Site Area Emergency condition listed in the Section D....	...Site Area Emergency threshold listed in Section D....	Yes	No - the word "the" isn't grammatically correct in this sentence. Also replaced condition with threshold to be consistent with the other classification wording. These changes do not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

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17.	1.d.1) Page E-4	...General Emergency condition listed in the Section D....	...General Emergency threshold listed in Section D....	Yes	No - the word "the" isn't grammatically correct in this sentence. Also replaced condition with threshold to be consistent with the other classification wording. These changes do not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
18.	3. Initial Notification 1st paragraph Page E-6	In a General Emergency the notification includes, at a minimum, a recommendation for evacuation of the general public within the two (2) mile ring of Indian Point Energy Center and five (5) miles downwind, and implement the NY State KI plan.	In a General Emergency, the notification includes, at a minimum, a recommendation for sheltering or evacuation of the general public within the two (2) mile radius of Indian Point Energy Center and five (5) miles downwind, and implement the NY State KI plan.	No	Yes – The protective action of sheltering was missing from this sentence.
	SECTION F: Martin				

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Change No.	Page/Section	Previous Version (17-01)	New Version (17-02)	Editorial Change	Effect on 10 CFR 50.47(b) Planning Standards or NUREG-0654 program elements? Justify if NO.
19.	**1. Description of Primary Communications Systems** **Public Address System** **Page F-1**	Public Address System This system is... In the event the Public Address System is...	Public Address Systems These systems are... In the event the Public Address Systems are...	Yes	No - Pluralized this section since there are PA systems at each unit. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
20.	**1. Description of Primary Communications Systems** **Telephone Exchanges** **Page F-1**	...Alternative Technical Support Center / Operational Support Center.	...Alternative Technical Support Center / Operational Support Center (Alternative TSC/OSC).	Yes	No - Added TSC/OSC acronym. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
21.	**1. Description of Primary Communications Systems** **Telephone Exchanges** **Page F-2**	...NRC personnel responding to the site.	...NRC personnel responding to the Site.	Yes	No - Made "s" upper case to be consistent with 17-01 revision. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change

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Change No.	Page/Section	Previous Version (17-01)	New Version (17-02)	Editorial Change	Effect on 10 CFR 50.47(b) Planning Standards or NUREG-0654 program elements? Justify if NO.
22.	Page F-7	White Plains Office	Fishkill	No	No – A separate 50.54q screen and evaluation was completed in 2017. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
23.	Page F-7		Added title: Figure F-1.3 Emergency Facilities Communications Systems	Yes	No – Added title to the Figure. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change
	SECTION G: Iraola No Changes				
	SECTION H: Ambrose				

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Change No.	Page/Section	Previous Version (17-01)	New Version (17-02)	Editorial Change	Effect on 10 CFR 50.47(b) Planning Standards or NUREG-0654 program elements? Justify if NO.
24.	**2. Emergency Operations Facility** **AEOF** **Page H-4**	...12th floor of the AT&T building at 440 Hamilton Avenue, White Plains, NY.	...2nd floor of 60 Merritt Boulevard, Fishkill, NY.	No	No – A separate 50.54q screen and evaluation was completed in 2017. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
	SECTION I: Robinson				
25.	**5. Meteorological Information** **Page I-5**	Section H.9 provides more details on the Meteorological Monitoring System.	Section H.10 provides more details on the Meteorological Monitoring System.	Yes	No- This is an editorial change to correct the referring section from H.9 to H.10. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
	SECTION J: Robinson				

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26.	**10.f** **Page J-5**	... addresses pre and post distribution of Radioprotective drugs.	... addresses pre and post distribution of radioprotective drugs.	Yes	No- This is an editorial change to correct "from R to r" capitalization issue. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
	SECTION K: Watts				
27.	**1. Emergency Exposure Guidelines** **Table, 1st row in the chart** **Page K-1**	0-5 Personnel may be kept within normal 10 CFR 20 occupational limits during declared emergencies or an emergency exposure up to 5 Rem may be authorized for members of the ERO.	0-5* Personnel may be kept within normal 10 CFR 20 occupational limits during declared emergencies or an emergency exposure up to 5 Rem TEDE may be authorized for members of the ERO.	No	No- Added an asterisk to refer to statement about doses to lens of eye and other organs/areas of the body. Revised wording to clarify that 5 Rem refers to TEDE dose. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

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Change No.	Page/Section	Previous Version (17-01)	New Version (17-02)	Editorial Change	Effect on 10 CFR 50.47(b) Planning Standards or NUREG-0654 program elements? Justify if NO.
28.	**1. Emergency Exposure Guidelines** **Table, 2nd row in the chart** **Page K-1**	Protecting valuable property	Protecting critical infrastructure necessary for public welfare	No	No- Revises wording for consistency with Entergy Fleet emergency exposure authorization Form EP-4-ALL. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
29.	**1. Emergency Exposure Guidelines** **Table, last row in the chart** **Page K-1**	Limit dose to the lens of the eye to 3 times the above values and doses to any other organ (including skin and body extremities) to 10 times the above limits.	* Limit dose to the lens of the eye and dose to any other organ (including skin and body extremities) to 10CFR20.1201 limits unless higher doses are evaluated and authorized on individual bases.	No	No- Revises wording for consistency with Entergy Fleet emergency exposure authorization Form EP-4-ALL. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

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30.	1. Emergency Exposure Guidelines last paragraph Page K-1	Any emergency response action requiring greater exposure than 10CFR20 limits should be limited to only volunteers. Individuals over forty-five years of age are considered first. Females of childbearing age shall not be permitted to receive exposures in excess of 10CFR20 limits.	Any emergency response action requiring greater exposure than 25 Rem should be limited to only volunteers. Individuals over forty-five years of age are considered first. Females who declare pregnancy are restricted to 10CFR 20.1208 limits.	No	No- Revises wording for consistency with Entergy Fleet emergency exposure policy and reference to 25 Rem on page K-2 of Section K (IPEC E-Plan) regarding females declaring pregnancy. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
31.	2. Emergency Radiological Control Program 2nd bullet Page K-2	• In the context of the emergency limits, exposure of workers that is incurred for the protection of large populations may be considered justified for situations in which the collective dose avoided by the emergency operation is significantly larger than that incurred by the workers involved.	• In the context of the emergency limits, exposure of workers that is incurred for the protection of critical infrastructure, lifesaving or protection of large populations may be considered justified for situations in which the collective dose avoided by the emergency operation is significantly larger than that incurred by the workers involved.	Yes	No- References wording provided updated for clarity and for consistency with Entergy Fleet emergency exposure authorization Form EP-4-ALL. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change
	SECTION L: Iraola				

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	SECTION M: Grosjean				
32.	**2.a** **Page M-3**	a. The Corporate Emergency Center Manager is responsible for: • Ensuring adequate corporate support to maintain Indian Point Energy Center (IPEC) units in a safe condition; • Ensuring Site Recovery Director is aware of Entergy Corporate goals and expectations for recovery of IPEC after an event; • Ensuring adequate support to the site to carry out recovery activities;	a. The Corporate Emergency Center Manager **reports to the Site Recovery Director and** is responsible for: • Ensuring adequate corporate support to maintain Indian Point Energy Center (IPEC) units in a safe condition; • **Overseeing development of corporate recovery issues dealing with support of the site;** • Ensuring Site Recovery Director is aware of Entergy Corporate goals and expectations for recovery of IPEC after an event; • Ensuring adequate support to the site to carry out recovery activities.	No	No - Section 2.a and Section 2.f repeat the same information. The new version combines the two sections into one with no loss of information. Section 2.f can be deleted in the new version. In addition, removed the semi-colon and replaced it with a period after the word activities. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

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33.	2.b Page M-4	• Maintaining a record/log of specific recovery actions taken.	• Maintaining a record/log of specific recovery actions taken;	Yes	No- Changed the period to a semi-colon for grammatical correction. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
34.	2.c Page M-4	• Identifying and documenting issues relating to Recovery operations • Coordinating the development and implementation of the recovery plan and procedures; • Directing all onsite activities in support of the recovery of Indian Point Energy Center; and • Designating other Indian Point Energy Center recovery positions required in support of onsite recovery activities.	• Identifying and documenting issues relating to Recovery operations; • Coordinating the development and implementation of the recovery plan and procedures; • Directing all onsite activities in support of the recovery of Indian Point Energy Center; • Designating other Indian Point Energy Center recovery positions required in support of onsite recovery activities; and	Yes	No- added a semi-colon after operations in the first bullet. Removed the word "and" in the third bullet Replaced the period with a semi-colon and the word "and". These were all grammatical corrections and the changes do not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

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35.	2.f Page M-5	f. The Corporate Emergency Center Manager reports to the Site Recovery Director and is responsible for: • Overseeing development of corporate recovery issues dealing with support of the site. • Ensuring the Site Recovery Director is aware of Entergy Corporate goals and expectations for recovery of IPEC after an event. • Ensuring adequate support to the site to carryout recovery activities.	Deleted	No	No - Section 2.a and Section 2.f repeat the same information. The new version combines the two sections into one with no loss of information. Section 2.f can be deleted in the new version. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
36.	4. Total Population Exposure Page M-6	Data are obtained from offsite agencies to estimate the total exposed population. Environmental TLDs, Bioassays, and continuing environmental monitoring results will be analyzed to provide additional data.	Data are obtained from offsite agencies to estimate the total exposed population. Environmental Dosimeter of Legal Record (DLRs), Bioassays and continuing environmental monitoring results will be analyzed to provide additional data.	No	No- Changed the terminology from TLDs to DLRs. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
	SECTION N: Karsten/Delamater				

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37.	1.a second sentence Page N-1	Where full participation by offsite agencies occurs, the sequence of events simulates an emergency that results in the release of radioactivity to the offsite environs, sufficient in magnitude to warrant a response by offsite authorities.	Where full participation by offsite agencies occurs, the sequence of events simulates an emergency that may result in the release of radioactivity to the offsite environs, sufficient in magnitude to warrant a response by offsite authorities.	No	Yes - This makes the clarification that when conducting drills with the offsite agencies, a scenario may not include a release of radioactivity. It provides for the option in a scenario.
	SECTION O: Robinson **No Changes**				
	SECTION P: Martin **No Changes**				
	APPENDIX 1: Ambrose **No Changes**				
	APPENDIX 2: Iraola				

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38.	Appendix 2-1	A revision to the EPLAN is not necessary to update Letters of Agreement.	Regular updates that do not change the level of service do not require an EPLAN change unless they impact the planning standards.	No	No- This sentence was enhanced to make clear that each change to the letters of agreement should be reviewed carefully to evaluate its impact, if any, to the planning standards. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
	APPENDIX 3: Martin				
39.	**Appendix 3-2**	IP-EP-610 "Termination and Recovery"	EN-EP-613 "Recovery"	No	No – Updating only the Recovery procedure number and subject addressed. 50.54Q3 completed 3/28/17 for the replacement of IP-EP-610 with EN-EP-613. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
	APPENDIX 4: Watts				

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40.	Appendix 4-2, bottom of page	RMT.....Radiation Monitoring Team	OMT...,Offsite Monitoring Team	No	No- Changed wording from RMT-Radiation Monitoring Team to OMT - Offsite Monitoring Team made to be consistent with current terminology in Plan. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
41.	Appendix 4-3, bottom of page	TAG..... Technical Assessment Group	Deleted	No	No- Deleted wording TAG-Technical Assessment Group because group no longer exists and is not referenced in the Plan. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

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42.	Appendix 4-8, bottom of page	Security Code Yellow - Indicates that a bomb threat has resulted in the discovery of a device; an unarmed individual has attempted to enter the site, or an unsuccessful sabotage. Personnel are restricted from using radios, cell phones or other electronic devices. Personnel may be directed to evacuate to their Assembly Area, or to respond to Emergency Response Facilities. All personnel are to remain in this position until an "all clear" or similar announcement is made over the plant page.	Deleted	No	No- Security Code Yellow -This security-related terminology is not referenced in other portions of the E-Plan and does not belong. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
43.	Appendix 4-8, bottom of page	Security Code Orange – Indicates that a successful sabotage to the plant has occurred. Personnel may be directed to evacuate to their Assembly Area, or to respond to their Emergency Response Facility. Personnel are restricted from using radios, cell phones or other electronic devices. All personnel are to remain in this position until an "all clear" or similar announcement is made over the plant page.	Deleted	No	No- Security Code Orange -This security-related terminology is not referenced in other portions of the E-Plan and does not belong. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

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44.	Appendix 4-9, top of page	Security Code Red – Indicates that security officers are responding to a threat or an actual armed intruder. Personnel may be instructed to conceal themselves or to evacuate to their Assembly Area. Personnel are restricted from using radios, cell phones or other electronic devices. Personnel in office environments are to stay away from windows and keep concealed under their desks. Personnel in the field should find equipment or areas in which to conceal themselves. All personnel are to remain in this position until an "all clear" or similar announcement is made over the plant page.	Deleted.	No	No- Security Code Red -This security-related terminology is not referenced in other portions of the E-Plan and does not belong. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.
	APPENDIX 5: Grosjean				

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45.	**Appendix 5-2, I. Introduction**	The traffic demand and trip-generation rate of evacuating vehicles were estimated from the gathered data. Sources of data include the 2010 Census, New York agencies, county agencies, a telephone survey and special concern facilities. (See Section 3/Appendix E and Section 5/Appendix F of the ETE for a complete discussion of traffic demand and trip generation time, respectively.) Following federal guidelines, the Indian Point Energy Center (IPEC) Emergency Planning Zone (EPZ) is subdivided into 38 Protective Action Areas. The Protective Action Area definitions are provided in Section II. The Protective Action Areas have been designed so that each can be defined in terms of well-known community names or boundaries. These Protective Action Areas are then grouped to conform with circular areas or "keyhole" configurations (circles plus radial sectors) that define Evacuation	The traffic demand and trip-generation rate of evacuating vehicles were estimated from the gathered data. Sources of data include the 2010 Census, New York agencies, county agencies, a telephone survey and special concern facilities. (See Section 3/Appendix E and Section 5/Appendix F of the **2012 ETE Report (Indian Point Energy Center, Development of Evacuation Time Estimates, KLD Engineering PC, KLD TR-537, December 2012)** for a complete discussion of traffic demand and trip generation time, respectively.) Following federal guidelines, the Indian Point Energy Center (IPEC) Emergency Planning Zone (EPZ) is subdivided into 38 Protective Action Areas. The Protective Action Area definitions are provided in Section II. The Protective Action Areas have been designed so that each can be defined in terms of well-known community names or boundaries. These Protective Action Areas are then grouped to conform with circular areas or "keyhole" configurations (circles plus radial sectors) that define Evacuation Regions for the ETE	No	No - No ETE data was revised, added or deleted for this 2017 E-Plan revision. KLD ETE documents were more clearly defined and referenced in the revised text. There are two (2) ETE reports that provide information for this Appendix – a 2012 ETE Report and a 2014 ETE Addendum. The revised text more clearly specifies from which document the information is coming from or referenced from. The two (2) ETE documents are more specifically detailed to include proper titles, KLD report numbers and dates of issuance. The additional ETE regions from the 2014 ETE Addendum are also now discussed. Updated ETE data was also obtained from the 2014 ETE Addendum and contained in the 2016 E-Plan revision. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

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	Page Appendix 5-2, I. Introduction (cont'd)	Regions for the ETE study. The Evacuation Regions are defined in Appendix H of the ETE Report. For each Protective Action Area within the EPZ, primary evacuation routes have been identified. Descriptions of the Protective Action Areas and their associated evacuation routes are given in the county plan procedures and in Section 10 and Appendix L of the ETE Report. Listings and maps of reception centers for each Protective Action Area are also included in the county procedures and in Section 10 of the ETE Report.	study. The Evacuation Regions are defined in Appendix H of the 2012 ETE Report. **Additional Regions were defined in the 2014 ETE Addendum (Indian Point Energy Center, Development of Evacuation Time Estimates, Addendum for Additional Regions (2-Mile Radius + Downwind to EPZ Boundary), KLD Engineering PC, KLD TR-557, October 17, 2014).** For each Protective Action Area within the EPZ, primary evacuation routes have been identified. Descriptions of the Protective Action Areas and their associated evacuation routes are given in the county plan procedures and in Section 10 and Appendix L of the 2012 ETE Report. Listings and maps of reception centers for each Protective Action Area are also included in the county procedures and in Section 10 of the 2012 ETE Report.		

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46.	Appendix 5-3 Section II	II. PROTECTIVE ACTION AREAS The plume exposure EPZ for the IPEC has been subdivided into 38 discrete Protective Action Areas as shown in Figure 1. The 2010 US Census permanent resident population estimates for each of the Protective Action Areas are provided in Table 1. The boundaries of the various Protective Action Areas are described by county in Tables 2 through 5.	II. PROTECTIVE ACTION AREAS The plume exposure EPZ for the IPEC has been subdivided into 38 discrete Protective Action Areas as shown in Figure 1. The 2010 US Census permanent resident population estimates for each of the Protective Action Areas are presented in the 2014 ETE Addendum and are provided in Table 1. The boundaries of the various Protective Action Areas are described by county in Tables 2 through 5.	No	No - Updated ETE data was obtained for the 2014 ETE Addendum and was included in the 2016 E-Plan revision but now only cited in the revised text. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

IPEC Emergency Plan Revision 17-02 (Merlin Revision 21) REVISION MATRIX FINAL

Change No.	Page/Section	Previous Version (17-01)	New Version (17-02)	Editorial Change	Effect on 10 CFR 50.47(b) Planning Standards or NUREG-0654 program elements? Justify if NO.
47.	Appendix 5-3 Section III	III. EVACUATION TIME ESTIMATES Evacuation time estimates by Region for each of the scenarios are presented in Section 7 of the ETE Report. An overview of evacuation time estimates for 90% and 100% of the population within the Protective Action Areas included in the regions defined by the two-mile and five-mile rings and for the full EPZ are provided in Tables 6-A, 6-B and 6-C.	III. EVACUATION TIME ESTIMATES Evacuation time estimates by Region for each of the scenarios are presented in Section 7 of the 2012 ETE Report. Updated evacuation time estimates for 90% and 100% of the population within the Protective Action Areas included in the regions defined by the two-mile and five-mile rings and for the full EPZ are presented in the 2014 ETE Addendum and provided in Tables 6-A, 6-B and 6-C.	No	No - Revised text specifies from which document information is coming from. Updated ETE data was obtained for the 2014 ETE Addendum and was included in the 2016 E-Plan revision but now only cited in the revised text. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

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48.	Appendix 5-5, Note 1 from Table 1	1. Indian Point Energy Center, Development of Evacuation Time Estimates, Addendum for Additional Regions (2-mile Radius + Downwind to EPZ Boundary), KLD Engineering P.C, KLD TR-557, Section 2, September 2, 2014	1. Indian Point Energy Center, Development of Evacuation Time Estimates, Addendum for Additional Regions (2-Mile Radius + Downwind to EPZ Boundary), KLD Engineering P.C, KLD TR-557, Section 2, October 17, 2014	No	No - The document title and issuance date was corrected. This change does not change the meaning or intent of a description, does not change facilities or equipment, and does not change a process. No further evaluation is required for this change.

CONTROLLED

Entergy. IPEC EMERGENCY PLAN	NON-QUALITY RELATED DOCUMENT	IPEC-EP	Merlin Rev. 21
	INFORMATION USE	17-02	

Indian Point Energy Center

Emergency Plan

Prepared by:	Antonio Iraola Print Name	 Signature	12/4/17 Date
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Part 1: INTRODUCTION

Section A: Purpose

As required by the licensing conditions set forth by the Nuclear Regulatory Commission (NRC) this document describes the emergency preparedness program for the Entergy Indian Point Units 1, 2 and 3 Generating Stations (Indian Point Energy Center). The philosophy that guides the development and maintenance of this program is the protection of the health and safety of the general public in the communities around the Indian Point Energy Center units and the personnel who work at the plant.

The Indian Point Energy Center Emergency Plan (Plan) outlines the basis for response actions that would be implemented in an emergency. This document is not intended to be used as a procedure. Detailed Emergency Plan implementing procedures are maintained separately and used to guide those responsible for implementing emergency actions.

This Plan documents the methods by which Entergy's Emergency Preparedness Programs meet the criteria set forth in Title 10 of the Code of Federal Regulations (CFR), Part 50, Section 47(b) and Appendix E.

The Plan is applicable to plant conditions that may cause or may threaten to cause radiological hazards at Units 1, 2 or 3 affecting the health and safety of workers or the public or resulting in damage to property. Unit 1 is defueled and only those areas of Unit 1 that either store or process radioactive materials (the Fuel Handling Building and waste storage/process areas in the Chemical Systems Building and the Integrated Liquid Radwaste Systems Building) were considered in evaluating radiological hazards.

This Plan is solely dedicated to Indian Point Energy Center and includes details of how Entergy utilizes its resources to assist the plant operating staff during an emergency situation.

Section B: Background

Description of the Indian Point Energy Center

Indian Point Energy Center (IPEC) is located on the east bank of the Hudson River about 24 miles north of the New York City boundary line, at Indian Point, Village of Buchanan, in upper Westchester County, New York State. The IPEC Site is about 2.5 miles southwest of the City of Peekskill; 8.3 miles south of West Point; 1.5 miles northeast of the Lovett generating station site; 4.6 miles north of the Bowline Point generating station site; and 2.3 miles north of Montrose Point. The Site is approximately 239 acres and contains three pressurized water reactors owned by Entergy. Figures 1.B-1 and 1.B-2 are maps that show the general location of the Site and its environs within a 10-mile and 50-mile radius, respectively.

Exclusion Area

Entergy has the authority within the site boundary, called the Exclusion Area, to determine all activities including the exclusion or removal of personnel and property (see Figure 1.B-3).

There are no residences within the exclusion area nor are there any public highways or public railroads traversing the exclusion area.

One main and one alternate access roads service the exclusion area. Several other roads interconnect with these two roads. In the event of an evacuation, all vehicular traffic will be directed to the appropriate access road depending on the wind direction, and traffic would exit the site onto Broadway in Buchanan.

Protected Area

A Security fence marks the perimeter of the Protected Area of the site. Access beyond the fence is restricted to badged employees or escorted visitors. Metal and bomb detectors are located at the Protected Area entrance. All buildings related to plant functions are within the Protected Area security fence.

The Independent Spent Fuel Storage Installation (ISFSI) is located within the Protected Area boundary for interim dry storage of spent fuel. The HOLTEC spent fuel storage casks are designed to ensure protection of public health and safety through use of physical barriers to guard against the uncontrolled release of radioactivity and through the use of shielding to minimize radiation dose to the public from both normal and off-normal conditions of operation. The analyses summarized in the HOLTEC Cask UFSAR demonstrate that under assumed accident conditions, the consequences of accidents challenging the integrity of the barriers will not exceed limits established in 10 CFR 72.106.

Population Distribution

Approximately 13,000 people live within a two mile radius, approximately 84,000 people live within a five-mile radius and approximately 300,000 within a ten-mile radius of the site based on the 2010 US Census population. A more detailed summary of population distribution can be found in Appendix 5 and the station's Evacuation Time Estimate Study.

Site Topography

The Indian Point Energy Center is surrounded on almost all sides by high ground with elevations ranging from 600 to 1000 feet above sea level. The general orientation of this mass of high ground is northeast to southwest. The Hudson River runs northeast to southwest at the Indian Point Energy Center location but turns sharply northwest approximately two miles north of the plant.

Steep, heavily wooded slopes flank the west bank of the Hudson: the Dunderberg and West Mountains to the northwest (elevation 1086 feet and 1257 feet, respectively) and Buckberg Mountain to the west southwest (elevation 793 feet). Further west are slightly higher peaks.

To the east of the site, peaks are generally lower: Spitzenberg and Blue Mountains average about 600 feet in elevation, and a weak, poorly defined series of ridges run in a north-northeast direction. The River south of the plant makes another sharp bend to the southeast and then widens as it flows past the towns of Croton and Haverstraw.

Plant

Unit 1 (615 MWt, defueled), Unit 2 (3216 Mwt) and Unit 3 (3189 Mwt). Figure 1.B-3 shows a general layout of the Site.

In a nuclear reactor system, containment is defined as the means of restricting, to sharply defined volumes, the distribution of radioactive materials that are in the process of nuclear fission. The IP-2 and IP-3 units have three containment barriers that exemplify the "Defense in Depth" philosophy.

The first or innermost of the barriers is the fuel rod. This encapsulates the fuel pellets that generate the heat energy and is designed to maintain its integrity for the anticipated core life.

The second containment barrier is the reactor pressure vessel. This pressure vessel contains the fuel rods, grouped into fuel assemblies, and the attached reactor coolant system which is comprised of four steam generators, four cooling pumps, pressurizer, and piping.

The third barrier, called the reactor containment structure, surrounds the reactor coolant system. The reactor containment is a steel-lined reinforced concrete cylinder with a hemispherical dome and a flat base. This outer containment is designed to withstand the internal pressure that accompanies a loss of coolant accident. The structure provides radiation shielding for both normal operations and accident conditions.

Section C: Scope

The primary hazard consideration at the Indian Point Energy Center is the potential unplanned release of radioactive material resulting from an accident at the site. The probability of such a release is considered very low due to plant design and strict operational guidelines enforced by the Nuclear Regulatory Commission (NRC). However, Federal regulations and common sense require that an emergency preparedness program exist for each commercial nuclear power station.

This Plan describes the response of Entergy personnel at the Indian Point Energy Center Site during emergencies. It identifies an IPEC Emergency Response Organization (ERO), describes facilities and equipment, assigns responsibilities and authorities and identifies procedures for responding to emergencies from minor injury to personnel to conditions having offsite radiological consequences. Implementing Procedures have been developed to implement this Plan. These procedures identify the elements of the ERO and the interface with supporting offsite organizations. In addition to the Implementing Procedures (IP), Plan Administrative Directives (AD) have been developed to ensure proper maintenance of the program. A listing of procedures cross-referenced to sections of the Plan are contained in Appendix 3. Complete copies of the Plan Implementing Procedures are maintained in the Control Rooms, Technical Support Center, Emergency Operations Facility and Alternate Emergency Operations Facility. Additional copies of individual procedures are distributed as needed to support the ERO.

Plant operating, radiological control and security procedures were considered in the development of this Plan. Reference to these procedures is made where necessary. Plant operating and emergency procedures are available in the Control Rooms for use by the operating staff. Radiological control procedures are available for use by the Watch Radiation Protection personnel. Procedures that address security requirements during emergencies for the security force are contained in the Security Procedures and Safeguards Documents.

This Plan includes agreements made with offsite organizations that furnish support during emergencies. These agreements are listed in Appendix 2. Specific notification and direction instructions are incorporated into the implementing procedures where necessary.

Elements of the offsite emergency response are specified in the Emergency Plans of New York State, Westchester, Rockland, Putnam and Orange counties.

Section D: Planning Basis

The Plan, in conjunction with the implementing and administrative procedures, documents the methods by which the Entergy Emergency Preparedness Program meets the planning standards set forth in 10-CFR-50.47 (b) and the requirements of 10-CFR-50 Appendix E. Other applicable regulations, publications, and guidance were used (see Appendix 1, "References") along with site-specific documents to ensure consistency in the planning effort.

This plan was developed in coordination with the New York State Office of Emergency Management and local county Offices of Emergency Management. These organizations have complementary emergency response plans.

Indian Point Units 1&2 previously owned by Consolidated Edison and Indian Point Unit 3 previously owned by the New York Power Authority, were consolidated under one owner, Entergy Corporation in 2001. Much of the planning efforts prior to the consolidation were carried on as a joint venture between the previous owners. In order to further streamline processes, planning efforts and establish standard responses, this single Plan was developed.

This Plan was developed to respond to and minimize the onsite and offsite impact of an accident at Indian Point Energy Center. The interrelationship between the Site, Corporate, Federal, State and local government organizations is discussed. Protective measures within the exclusion area (onsite) are the responsibility of Entergy. Protective measures outside the exclusion area (offsite) are the responsibility of state and local government authorities. The Onsite and Offsite Emergency Organizations can respond to any incident or accident 24-hours every day. These emergency organizations consist of many subgroups. The responsibilities, authorities and interactions between the subgroups are discussed in Part 2, Section B of this Plan.

This Plan incorporates a classification system for emergencies and prescribes the recommended actions which are recommended to Offsite to be taken to protect the safety of the public, plant personnel and property both onsite and offsite. These actions are

contained in the Plan Implementing Procedures. The Plan addresses the responsibilities of personnel and the available resources.

The State and local government responses to plant-related emergencies outside the exclusion area are coordinated between the New York State Office of Emergency Management and the County Offices of Emergency Management as described in their respective Emergency Plans.

The response to an emergency occurs in three phases.

1. The first phase (initial) includes immediate operator actions to maintain or bring the plant to a safe shutdown condition, initiate action to protect onsite personnel, classify the emergency and notify plant personnel and the appropriate offsite authorities. This phase is conducted by watch personnel (refer to Part 2 section B) with the assistance of other in-house personnel as needed.
2. The second phase (activation) includes actions to terminate the incident, monitor both onsite and offsite monitoring areas, assess the extent of any release of radioactivity, and disseminate the assessment (estimated exposure information) to offsite authorities. The second phase is performed under the direction of the Emergency Director (ED) at the EOF/AEOF. This phase includes augmenting the Onsite Emergency Organization with support from offsite.
3. The third phase (recovery) begins once the emergency is terminated and includes planned actions for re-entry by workers to restore the station to normal operation, assisting offsite authorities return the public evacuated from around the Site, and implementing post accident environmental sampling as needed. This phase is the responsibility of the Site Recovery Director.

Section E: Governmental Emergency Planning

Entergy works with Federal, State and Local government agencies to insure an integrated emergency response within the Emergency Planning Zones (Figures 1.B-1 and 1.B-2) located around the Indian Point Energy Center.

Section F: Emergency Plan Guidance and Criteria

The Indian Point Emergency Plan and related implementing procedures integrates guidance from several governmental and industry standards to provide the best protection of the health and safety of the public. See Appendix 1, References, for a list of documents used in development of this plan.

Section G: Assistance to Non-Entergy Planning Efforts

Entergy provides technical assistance and other assistance as required to State and Local Agencies who are involved in the emergency planning effort for Indian Point Energy Center.

Section H: Response Organization

This Plan and its associated implementing procedures outline Entergy's responsibilities for the protection of onsite persons. Specific responsibilities, organizations and program implementation are outlined in other sections of this Plan, its associated Implementing Procedures and supporting Administrative Directives.

Section I: Federal Response

The Federal Government has an integrated response plan in the event of a radiological emergency at any facility. Provisions are made within this Plan for the integration of appropriate elements of the federal assistance activities. Arrangements have been made to accommodate a federal response organization presence in the Entergy emergency response facilities as well as support communications between utility and federal emergency facilities. NRC response as described in NUREG-0728, "Concept of Operations: NRC Incident Response", was used in the development of the Plan as guidance to ensure coordination between Entergy and NRC EROs.

Section J: Form and Content of Plan

This Plan has been formatted similar to NUREG-0654, FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants", Revision 1.

Because this Plan is formatted in the same manner as the guidance document, no section cross-reference is needed.

An appendix is provided to cross reference Implementing Procedures and Administrative Procedures to sections of the Plan.

Figure 1.B-1
10-Mile Emergency Planning Zone

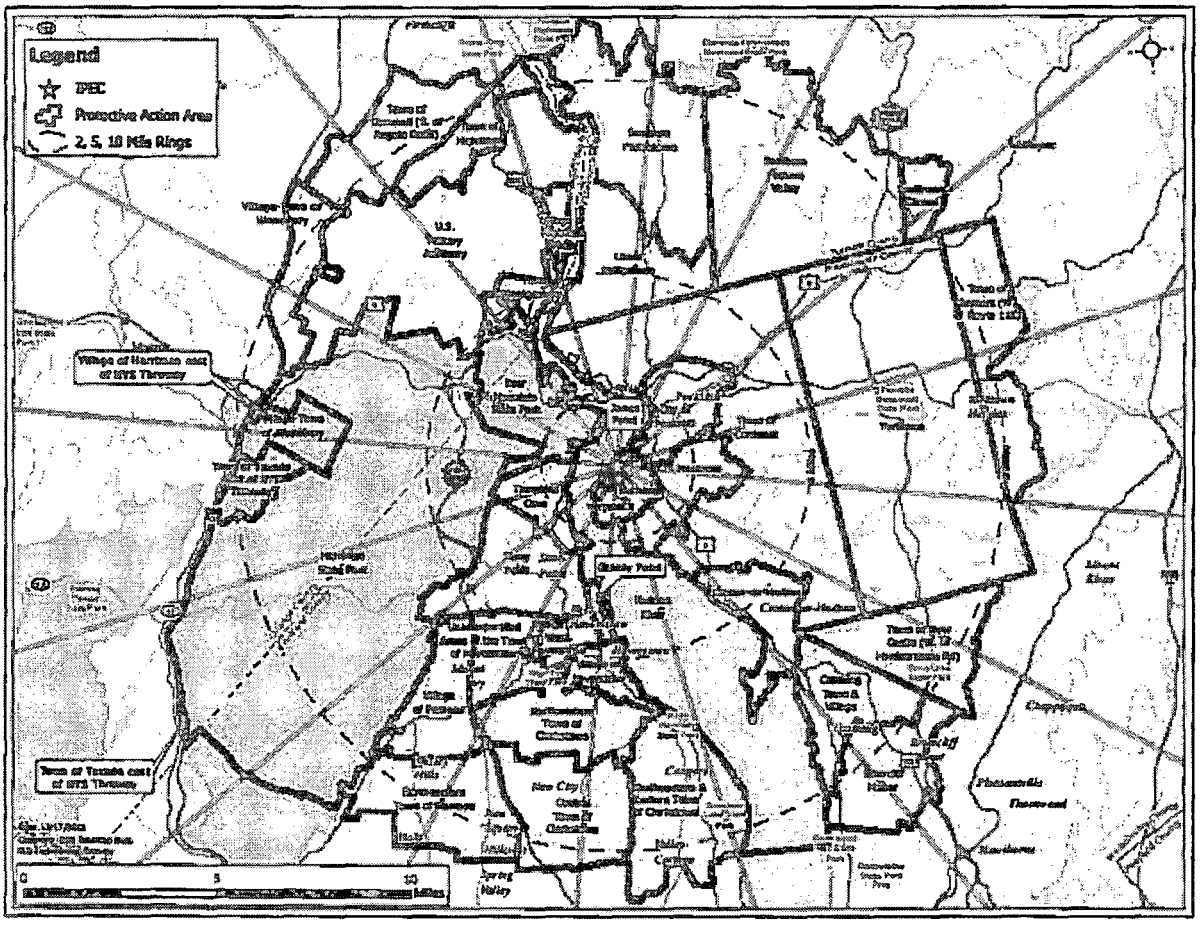
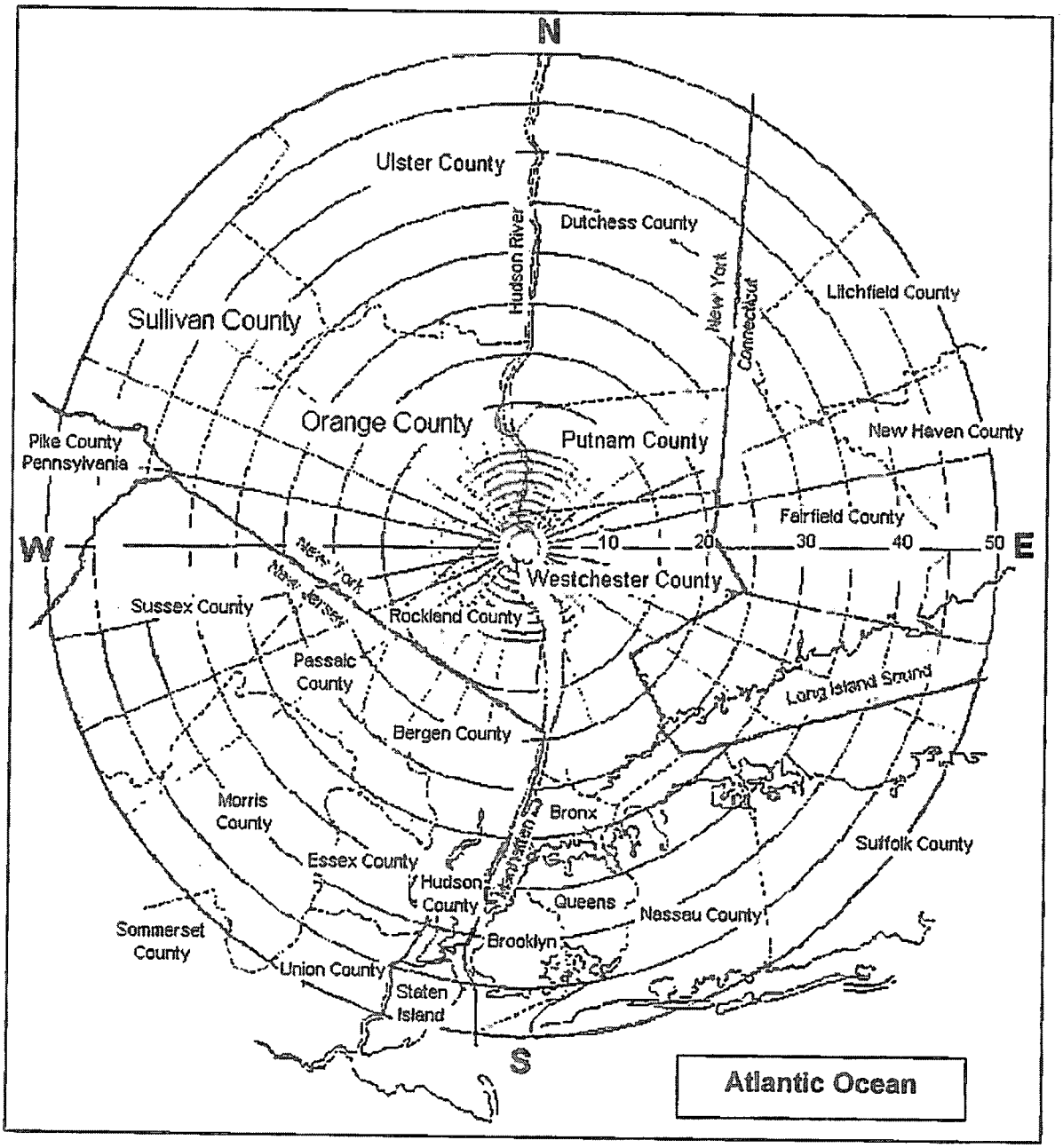
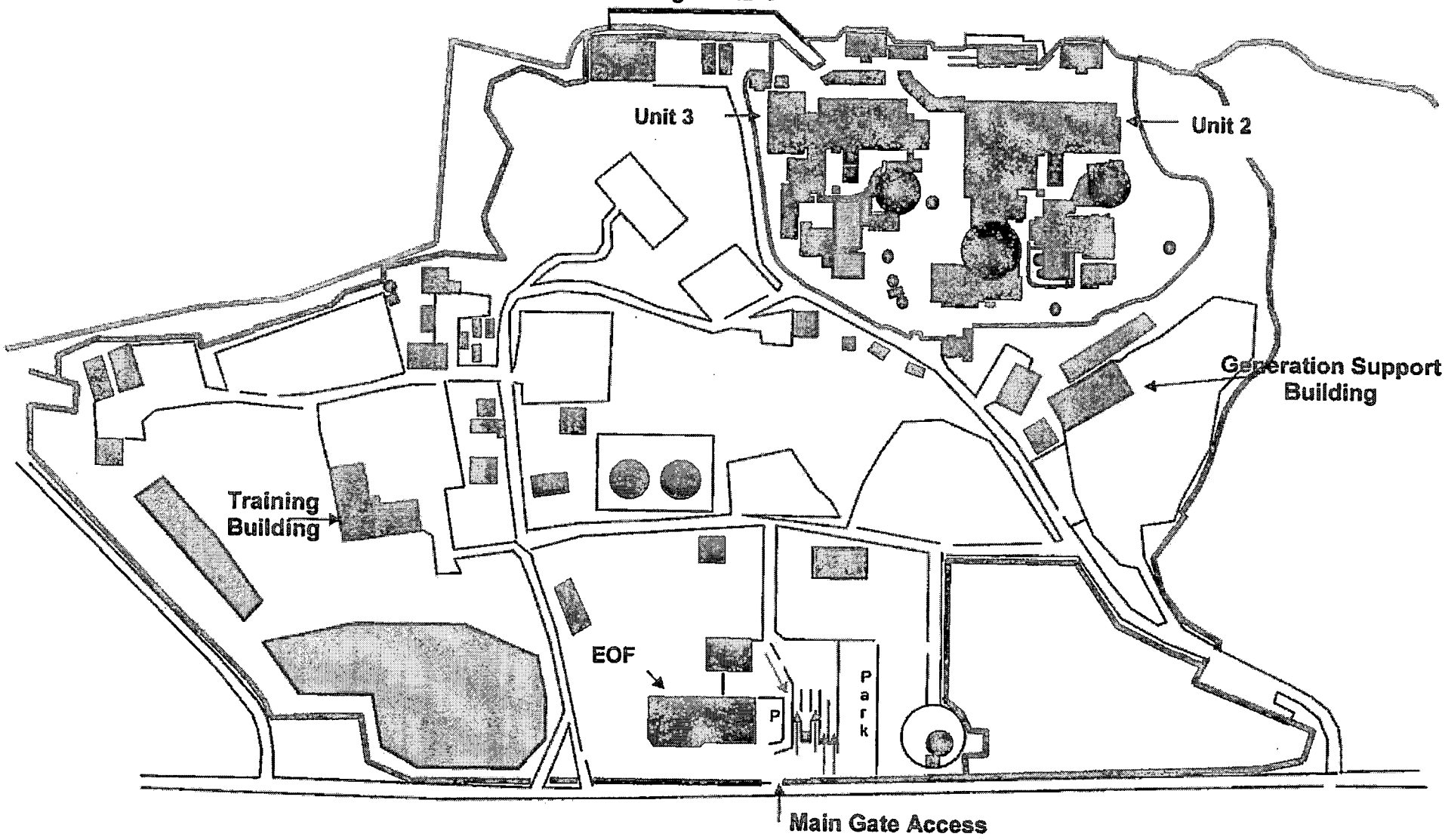


Figure 1.B-2
50 Mile Emergency Planning Zone



INDIAN POINT ENERGY CENTER SITE MAP

Figure 1.B-3



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Part 2: PLANNING STANDARDS AND CRITERIA

Section A: Assignment of Responsibility

This section describes the primary responsibilities for emergency response by IPEC, Federal, State, and local organizations within the Indian Point Plume Exposure Pathway and the Ingestion Pathway Emergency Planning Zones (EPZs). Various supporting organizations are also described as well as staffing for initial and continuous response.

In the event of an emergency, as defined in Part 2, Section D, various Federal, State, and County organizations will be notified. This section identifies the principal State agency and other government agencies having planning and/or action responsibilities for emergencies, in the Westchester, Orange, Putnam and Rockland County areas of New York State.

1. Organizations

The relationships and the concept of operations for the organizations and agencies supporting a response in the Indian Point Emergency Planning Zones are as follows:

a. Identified below are Federal, State, local, and private organizations that are involved in a response to an emergency at Indian Point Energy Center.

Federal Agencies

The Federal Radiological Emergency Response Plan (FRERP) outlines the statutory and regulatory responsibilities. The primary Federal response at Indian Point Energy Center supporting an emergency includes:

- Nuclear Regulatory Commission (NRC), who act as technical/regulatory advisors to Indian Point Energy Center during an emergency. They provide Federal communications capabilities, coordination of Federal assistance, and assessment of onsite radiological incidents and potential offsite consequences.

- The U.S. Department of Energy operates a Radiological Assistance Program from its regional office at Brookhaven, Long Island. The Radiological Assistance Plan, which specializes in radiation safety and medicine, will provide assistance to the Nuclear Facility Operator, the State or the county at their request. This assistance, which includes monitoring of the environment surrounding the site, is available twenty-four (24) hours a day by calling the contact phone number. The expected time of arrival is approximately 3 hours. The ED is authorized to request this assistance in the event it is necessary. Westchester County Airport, located approximately 30 minutes by automobile from the site, can supply facilities for air transportation.

- Federal Emergency Management Agency (FEMA), who coordinates the overall offsite Federal response and provides Federal resources and assistance to state and local governments. FEMA is a division of the Department of Homeland Security (DHS).

- Environmental Protection Agency (EPA), who assists with field radiological monitoring/sampling and non-plant, related recovery and re-entry guidance.

- During a radiation incident that could have offsite radiological consequences, the U.S. Coast Guard will assist by maintaining traffic control on the Hudson River. Coast Guard assistance is requested by and coordinated through New York State, the appropriate county, or FEMA.

- National Weather Service, who provides meteorological information to Indian Point Energy Center in the event that the onsite meteorological tower or monitoring instrumentation becomes inoperative.

New York State Agencies

- The agency responsible for emergency planning is the New York State Office of Emergency Management (NYSOEM). The Chairman of the Disaster Preparedness Commission will assume the direction and coordination of the State response activities. The specific tasks and responsibilities assigned to various departments and agencies of the State are delineated in New York State Comprehensive Emergency Plan, Radiological Hazards Annex for Fixed Nuclear Facilities. Notification to the State of emergency conditions would be as indicated in Part 2, Section E.

- New York State has Emergency Operation Centers in Albany, Westchester and other areas in the state. All of the state EOCs are equipped with communication capability.

County Offices of Disaster and Emergency Services/Emergency Management

The four (4) counties located within the 10 mile Emergency Planning Zone (EPZ) that are involved in emergency response activities at the Indian Point Energy Center Site include:

- Westchester County, in which Indian Point Energy Center is located;

- Rockland County, on the west side of the Hudson River across from Indian Point Energy Center;

- Orange County, on the west side of the Hudson River, north of the plant. The closest boundaries of Orange County are approximately four (4) miles from Indian Point Energy Center.

- Putnam County, on the east side of the Hudson River, north of the plant. The closest boundaries of Putnam County are approximately four (4) miles from Indian Point Energy Center.

Each county has an Office of Emergency Management. The Director of each of these offices, or their designee, will act as the County Emergency Operations Manager in the County. Bergen County is a host county that assists Rockland County in the event of an evacuation of the general public. The city of Peekskill takes direction from Westchester County and has its own Warning Point and Emergency Operation Center.

Emergency Operations Centers are where county managers direct and coordinate the County's response, under the authority of the Chief Executive of the County, for natural and man-made disasters. Notifications to the Counties of an Unusual Event, Alert, Site Area or General Emergency at Indian Point Energy Center would be as described in Part 2, Section E.

b. During an emergency condition at an Alert, Site Area Emergency, or General Emergency level, the Indian Point ERO replaces the normal plant organization. Indian Point Energy Center concept of operations is to utilize the entire station staff and if needed the entire company (Entergy) resources to protect the health and safety of the public and station personnel during an emergency at the site. Part 2, Section B outlines the organizations established.

c. Figure A-1 illustrates the interrelationships of the organizations involved with emergency planning for Indian Point Energy Center.

d. The Shift Manager (or the Control Room Supervisor in his/her absence) is in charge of the Indian Point Energy Center emergency response until relieved by another qualified ED who is then in charge of the entire IPEC ERO.

e. Continuously manned communication points have been identified for all agencies involved in the planning effort.

2. State and Local Functions and Responsibilities

The State, and local counties have Emergency Response Plans that specify the responsibilities and functions for the major agencies, departments, and key individuals of their emergency response organizations. This information is located in their respective Plans.

Along with the State of New York, the States of Connecticut, New Jersey and Pennsylvania are within the boundaries of the Emergency Planning Ingestion Pathway 50-mile radius. The specific response of these states is found in their respective Emergency Response Plans.

3. Agreements in Planning Effort

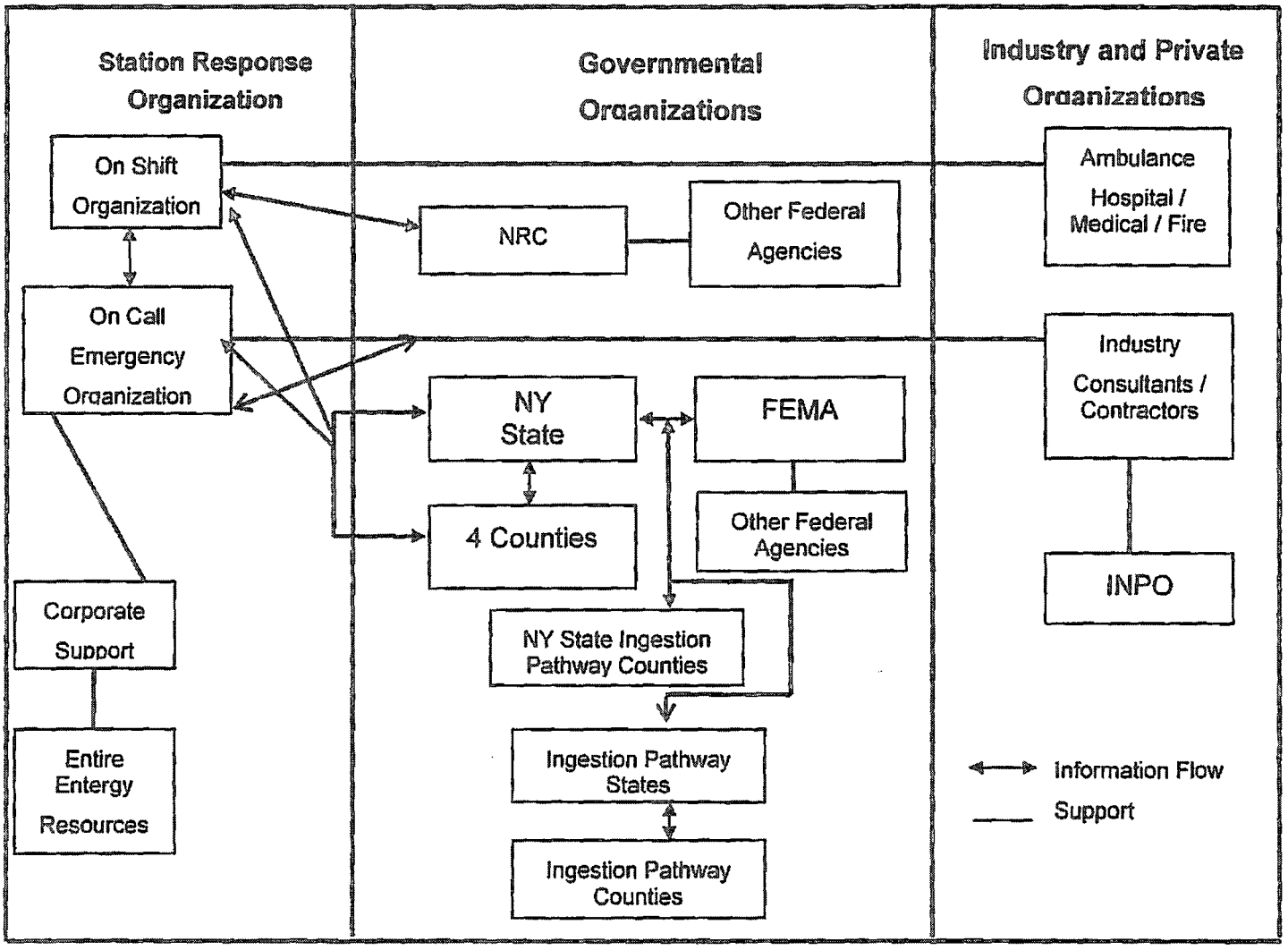
Agreements establishing the concept of operations developed between IPEC and other support organizations having an emergency response role within the Indian Point Emergency Planning Zones (including hospitals and medical transportation) are provided in Appendix 2, "Letters of Agreement." These agreements identify the emergency measures to be provided and the mutually accepted criteria for implementation. Federal, State, and local agencies that have response functions covered by laws, regulations, or executive orders have developed plans to meet these functions. These approved Plans serve as written agreements for agencies response to an incident at Indian Point Energy Center. A contract/purchase order with a private contractor/business is considered acceptable in lieu of a Letter of Agreement for the specified duration of the contract.

4. Continuous Coverage

The Indian Point ERO has sufficient numbers of qualified, trained personnel to provide the capability of continuous (24-hour) operations. The Manager of Emergency Preparedness administers programs to ensure availability of resources in the event of an emergency. The ED has the authority and is responsible for assuring continuity of resources (technical, administrative, and material) in the event of the activation of the Indian Point ERO.

Figure A-1

Emergency Response Organizations Interrelationships



Notes:

1. Until the On-Call ERO is in place the Shift Manager (or Control Room Supervisor if Shift Manager is unavailable) has the responsibility and duty to notify Federal, State and Local governmental authorities and request any assistance needed to protect the public and station personnel.

2. Once the On Call ERO is in place, the ED, located in the EOF, has overall responsibility and authority to direct the Entergy emergency response and request outside assistance as needed.

Part 2: PLANNING STANDARDS AND CRITERIA

Section B: Station Emergency Response Organization

This section describes the Indian Point ERO, their key positions and associated responsibilities. It outlines the staffing requirements, which provide initial emergency response actions and provisions for timely augmentation of on-shift personnel when required. It also describes interfaces among Indian Point Energy Center response personnel and specifies offsite support available to respond to the site.

Table B-1, outlines the minimum staffing for emergency response required to be on-shift and other key responders capable of responding within 60 minutes of a declared emergency to support the on-shift organization.

1. Indian Point Emergency Response Organization Assignments:

   Figure B-1.1 illustrates the staffing for the normal on-shift complement. Members of the on-shift organization are trained on their responsibilities and duties in the event of an emergency, and are capable of performing initial emergency response actions. Figures B-1.2a-d illustrate the full ERO. The full ERO will be activated at an Alert, Site Area Emergency or General Emergency.

   a. Normal Plant Organization

      The normal Indian Point Energy Center staff and operational organization is detailed in Site Administrative Procedures. Figure B-1.3 shows an overview of the normal station organization at Indian Point Energy Center.

      Each Unit's normal watch organization [Figure B-1.1] functions twenty-four [24] hours per day, seven [7] days per week. The minimum on-shift staffing is shown in Table B-1 and includes the following qualified individuals:

      One [1] Shift Manager, who holds a Senior Reactor Operator's license and is in charge of operating personnel during his/her shift and is responsible for assuring that all operations are conducted in accordance with approved procedures and the limitations set forth in Unit Technical Specifications;

      One [1] Control Room Supervisor, who holds a Senior Reactor Operator's license and is responsible for safe operation of the unit within the requirements of the Technical Specifications;

Two [2] Control Room Operators, who hold a Reactor Operator's license, are responsible for manipulating controls in the Control Room including taking the immediate operator action required as stipulated by written procedures necessary to maintain or bring the plant to a safe condition during abnormal and/or emergency conditions;

One [1] Field Support Supervisor or Shift Technical Advisor performs in an advisory capacity to the Shift Manager. This position is not required during cold shutdown;

One [1] Unit 3 SRO is assigned as Fire Brigade Leader (FBL) for both units;

Six [6] Nuclear Plant Operators at Unit 2 and five [5] at Unit 3 who perform plant operations, minor maintenance and monitoring under the direction of the Control Room Supervisor. One [1] Unit 2 NPO is assigned to Unit 1 and Safe Shutdown (SSD), and one Unit 3 NPO is the communicator for notifications for both units;

One [1] Radiation Protection Technician and one [1] Chemistry Technician perform radiation monitoring, surveillance, decontamination, and water chemistry as necessary at each unit. The Radiation Protection Technician can perform emergency duties at Unit 2 and/or Unit 3 during emergencies.

The watch organization is augmented during normal working hours Monday through Friday by the Indian Point Energy Center Management and Operations Staff (shown in Figure B.1-3) which is organized to lend expertise to the watch force.

The Security organization maintains site security and guards' access to the plant and controlled areas at all times working under the direction of the Shift Manager and the Security Shift Supervisor.

The Shift Manager (Control Room Supervisor in the absence of the Shift Manager) has the responsibility and authority to declare an emergency, initiate the appropriate immediate action in accordance with written procedures, mitigate the consequences of the emergency, activate the full Emergency Response Organization and notify offsite support and government agencies.

b. On call Emergency Response Organization

The ERO is established to assure that a sufficient number of appropriately qualified personnel are available each day, 24 hours a day to deal with any emergency situation.

During an event or emergency at Indian Point Energy Center, the initial phase of the response is conducted by the normal shift complement onsite. The Watch Force, depicted in Figure B-1.1, satisfies the NUREG-0654 requirements for on-shift personnel and on-shift staffing in accordance with guidance of NRC's NSIR/DPR-ISG-01 interim staff guidance and NEI 10-05 Assessment of On-Shift Emergency Response Organization Staffing and Capabilities. An analysis of the IPEC On-Shift staffing was conducted and a final analysis report was issued. The analysis report is available as a separate document. The analysis resulted in a total of thirteen persons on-shift at each unit.

Table B-1 presents, in tabular form, the minimum staffing requirements of on-shift personnel and the additional personnel capable of augmenting the on-shift organization within 60 minutes.

Those personnel identified to augment the Watch Force within 60 minutes of the declaration of an Alert or higher are part of the on-call ERO. These personnel are notified by an electronic notification system and public address announcements, and are immediately available during normal working hours. These personnel are notified by an electronic notification system during non-working hours. An alternate notification system using an automated telephone notification process is used in the event that the normal electronic notification system is unavailable.

The activation phase consists of ERO activation. This includes the normal watch and personnel needed to staff the Emergency Operations Facility (EOF), the Technical Support Center (TSC), the Operations Support Center (OSC) and the Joint Information Center (JIC). This occurs at an Alert classification or higher. A partial or complete ERO activation may be implemented at a NUE classification.

The ERO is capable of performing those activities necessary to:

(1) Maintain control of the plant and mitigate the consequences of the emergency,

(2) Conduct accident assessment and analysis to determine the full scope and impact of the situation,

(3) Establish and maintain communications with authorities responsible for implementing offsite emergency measures,

(4) Conduct a coordinated emergency public information program, and

(5) Conduct long-term emergency response activities.

Activation of the ERO gives the ED full access to the resources of Entergy. In addition to the above listed facilities, corporate resources are made available as needed to support the onsite ERO.

Figures B-1.2a-d illustrate the Indian Point ERO. Personnel who will fill the positions identified are listed in an Emergency Telephone Directory.

2. Authority Over Indian Point Emergency Response Organization:

The Shift Manager (or the Control Room Supervisor in the event that the Shift Manager is unavailable), acting as the ED, has the authority to declare an emergency, immediately takes charge of the emergency response effort and is responsible for offsite dose assessment until relieved by another qualified ED. He/she activates the ERO as necessary and continues to direct the emergency response until relieved by another qualified ED.

The relieving ED/Plant Operations Manager (POM) takes charge of the overall emergency response, thus freeing the Shift Manager to direct his/her attention towards the mitigation of the accident using the emergency operating procedures. The POM holds this position until the on-call ED arrives. Overall control of the Onsite ERO is maintained by the Emergency Plant Manager (EPM) in the TSC. After command and control is transferred to the ED in the EOF/AEOF, it remains there until the event is terminated. In the event that the ED becomes unavailable or personnel at the EOF are required to transfer to the AEOF, command and control may be transferred to the CCR until such time as a new ED assumes command and control or the ED assumes command and control upon arrival at the AEOF.

Although the ERO described in this section of the Plan fulfills the regulatory requirements for emergency response, it may be altered by the ED. This alteration would be based on the needs within the ERO during an actual event.

3. Succession to Emergency Director:

The duties and responsibilities of the ED are initially assumed by the Shift Manager (CR Supervisor in his/her absence). When the EOF becomes operational, the on-call ED relieves the Shift Manager of ED responsibilities, and overall command and control of the emergency is transferred to the EOF. The Plant Operations Manager (POM) relieves the on-shift ED until such time as the EOF is operational. The POM must remain in the Control Room.

The position of on-call ED is normally staffed by high level station management personnel.

4. Emergency Director Responsibilities:

The ED is responsible for directing and coordinating the integrated emergency response effort of all Company activities during the emergency including those which originate from Corporate Headquarters. Personnel trained in accordance with this plan and qualified as EDs are designated in an Emergency Telephone Directory. The ED is stationed in the EOF during an Alert, Site Area Emergency or General Emergency and is the interface between the onsite and offsite authorities. He/she has the responsibility and authority to provide Protective Action Recommendations (PARs) to the authorities responsible for implementing offsite emergency measures.

Specific responsibilities of the ED include:

- Declares and upgrades the emergency as warranted and initiates recovery phase when appropriate (non-delegable);
- Reviews and approves notifications to the State and Local authorities (non-delegable);
- Recommend protective actions for the general public to offsite authorities (non-delegable);
- Authorization of Emergency Exposures and issuance of KI to Entergy personnel outside the Protected Area;
- Establish communications with the emergency response facilities and obtain information on the diagnosis and prognosis of the accident condition;

- Review all radiological, meteorological and operational data and update the offsite authorities and the JIC;
- Receive designated responding representatives from offsite emergency agencies and assist in their information and communication needs;
- Arrange for and dispatch any special assistance or service requested (e.g., radiological measurement or protection equipment, onsite medical treatment);
- Coordinate offsite radiological evaluations with the State and Counties;
- Relate all of these actions to the remainder of the emergency response organizations;
- Release of non-essential personnel from the site; and
- Approves information to the public prior to the JIC activation.

The ED is assisted in these activities by the entire ERO. Although the ED may delegate some of these responsibilities, he/she may not delegate the responsibility to classify events or for the decision to notify authorities and recommend offsite protective actions.

5. Key Position Responsibilities and Emergency Functions

In addition to the key positions and functions listed below, Table B-5, Emergency Response Organization Functions, gives an overview of the ERO position functions.

a. Emergency Plant Manager (EPM)

The EPM reports directly to the ED. He/she directs and coordinates the operational aspects of the In-Plant ERO. He/she assures proper coordination and direction of the efforts of each element of the In-Plant ERO in returning the plant to and maintaining it in a safe and stable condition. The EPM is located in the TSC. Specific responsibilities include:

- Directing actions to mitigate the accident;
- Directing the in-plant radiological monitoring;
- Authorization of emergency exposure limits and issuance of KI to Entergy personnel inside the Protected Area;
- Authorizing the mobilization of search and rescue teams;
- Directing and maintaining accountability within the protected area fence; and
- Assuring that all emergency personnel within the protected area fence take adequate protective measures.

b. Emergency Operations Facility (EOF) Manager

The EOF Manager reports directly to the ED. Specific responsibilities of the EOF Manager include:

- Coordination of Entergy's emergency response efforts outside the Protected Area Fence;
- Assist the ED in the interpretation of offsite radiological assessments for emergency classifications and Protective Action Recommendations in terms of both real-time measurements and projected radiological exposures;

- Ensure proper communications between the Indian Point ERO and offsite response organizations; and
- Assist offsite authorities responding to Entergy facilities.

c. Company Spokesperson

The Company Spokesperson reports directly to the JIC Manager. Specific responsibilities of the Company Spokesperson include:

With assistance from the JIC Manager, coordination of Entergy's public information response efforts;

- Act as the official Entergy representative to the media; and
- Interface with other response agencies' Public Information Officers.

d. Summary of ERO Functions

In addition to the direction and coordination of the emergency response effort just discussed, other major functional areas of responsibility are identified as necessary to deal with emergency situations. Assignments made for these functional areas are discussed below.

1) Technical Support

Technical support is performed in the TSC under the direction of the TSC Manager. It is the central facility for the accumulation and re-transmittal of plant parameters;

Specific functions of the TSC include;

- Analyzing and developing plans and procedures in direct support of Plant Operations personnel;
- Analyzing and resolving core physics, thermodynamic, hydraulic, mechanical, electrical and instrument problems;
- Designing and coordinating short-term modification to plant systems;
- Keeping the ED apprised of plant conditions; and
- Interfacing with NRC personnel in the TSC.

Personnel from the plant's engineering departments are assigned to these functions. In addition personnel with operational experience are assigned to perform operational accident assessment activities in support of the watch personnel handling the in-plant accident conditions.

2) Plant Operations and Assessment of Operational Aspects

While overall direction of in-plant operations is the responsibility of the Plant Operations Manager, responsibility for plant systems operations remains with the Control Room Operators and the Nuclear Plant Operators under the direction of the Shift Manager and Control Room Supervisor.

3) Notification/Communication

The Control Room communication links with offsite authorities are available each day 24-hours a day. The initial notification of offsite authorities and ERO personnel is initiated by the Shift Manager and/or Control Room communicator. Communications with offsite authorities are maintained from the Control Room until the ED takes over the responsibility at the EOF. A communicator is designated at the EOF to establish/maintain communication links.

4) Radiological Accident Assessment (In-Plant)

In-plant radiological monitoring and chemical/radiochemical analysis is provided by the Watch Radiation Protection Technician and Chemistry Technician, respectively, under the direction of the Shift Manager and by other responding personnel under the direction of the EPM.

5) Radiological Accident Assessment (Out-of-Plant and Offsite)

The expertise for evaluating the radiological consequence of the accident is provided by the Dose Assessors and the Offsite Team Coordinator who function directly under authority of the Radiological Assessment Coordinator (RAC). These individuals ensure that sufficient monitoring activities are instituted, evaluate and assess the results and apprise the RAC of all activities, results and recommendations. Offsite radiological monitoring is provided by responding Radiation Protection Personnel or individuals trained as Offsite Monitoring Team members. These same personnel also provide radiological monitoring outside the Protected Area.

6) Repair and Corrective Actions

The Shift Manager and Nuclear Plant Operators perform emergency repairs if necessary, within the first 60 minutes.

Maintenance mechanics, I&C Technicians and operations personnel (NPOs) who respond to the OSC perform repair and corrective actions directed by the OSC Manager.

7) Protective Actions (In-Plant)

The Watch Radiation Protection Technician is normally responsible for radiation protection in-plant. They are immediately available under the direction of the Shift Manager during the first 60 minutes. When the TSC and OSC become operational, Radiation Protection personnel are directed by personnel staffing those facilities.

8) Firefighting

Firefighting is the responsibility of the Fire Brigade as defined in the Indian Point Station Fire Protection Program Plan. The Fire Brigade consists of members who are trained in firefighting techniques and are on duty 24 hours a day. A local fire department may be called if necessary.

9) Rescue Operations and First Aid

Search and rescue jurisdiction during an emergency is divided between the in-plant area (inside the protected area fence), which is handled by the Shift Manager/POM or EPM and the rest of the onsite area which is handled by the ED. The Shift Manager using available personnel onsite until the other emergency response facilities are activated, if required, would initially direct search and rescue operations.

There is at least one individual on duty 24 hours a day who is trained in first-aid techniques. Additional medical support can be called as necessary.

10) Security Site Access Control and Personnel Accountability

Overall Security response is coordinated in the Incident Command Post (ICP). IPEC Security Management may be assisted by the NY State Police.

Plant security and site access control are the responsibility of the Security Shift Supervisor and the Security Force, with backup assistance available from the Local Law Enforcement Agency (LLEA) as the situation demands.

Personnel accountability during an Alert, Site Area Emergency or a General Emergency is the responsibility of the TSC Security Coordinator. Emergency Plan Implementing Procedures outline the steps that are used to account for all personnel including employees having emergency assignments, visitors and contractors who may be within the Protected Area.

11) Information Dissemination

To assure that only factual and consistent information is released; statements concerning the emergency are the responsibility of Indian Point Energy Center communications personnel and/or individuals assigned to the JIC. A Press Release Writer is available on call 24 hours a day and is responsible for interfacing with the news media for release of any public statements prior to the JIC being operational.

The JIC Manager is responsible for providing accurate and timely information to the public through the news media and coordinating with Federal, State and local public information officials to assure timely exchange and release of information. Both the Press Release Writer and the JIC Manager have access to all necessary information, either directly available to them or available through the onsite ERO. A Public Information Liaison reports to the EOF with the initial augmentation of the watch force to facilitate information flow regarding the emergency to the JIC Technical Advisor. The ED prior to the activation of the JIC approves information that is used to notify the public. Once the JIC is operational, the JIC Press Release Writer prepares the press release, and once approved by the ED, disseminates the information to the public.

6. Indian Point Emergency Response Organization Block Diagram:

Figures B-1.1, B-1.2a thru B-1.2d illustrate the positions of the Indian Point ERO and supporting positions. Positions are assigned to interface with Federal, State, and local authorities. Sections B.4 & B.5 discuss specific responsibilities and the interrelationships for key positions. Table B-5 gives a brief description of the functions performed by most ERO positions. Implementing procedures provide details on ERO activities and may identify additional assignments. Also, ERO Managers are responsible for ensuring adequate personnel are available to carry out emergency functions.

7. Entergy Corporate Emergency Response:

Company personnel augment, as necessary the onsite staff in the performance of certain functions required to cope with an emergency. The Admin & Logistics Coordinator and/or the Corporate Duty Manager coordinates corporate support into the ERO once the on call ERO is activated. With the full activation of the ERO, Entergy is capable of continuous (24 hour) operations for a protracted period. The ED will ensure the continuity of resources (technical, administrative and logistics) to support the emergency response.

8. Private Industry Support:

   a. Laboratory Services

      The availability of laboratory/analytical services used by Entergy Nuclear has been ensured.

b. Additional Technical Assistance

If the need for additional technical assistance is identified, this may be obtained by the TSC Manager and the ED. Assistance of this type could include that from the NSSS Supplier (Westinghouse), architect engineer and consultants. A copy of the letter of agreement with Westinghouse is referenced in Appendix 2. Other assistance is also available using existing contracts, i.e.: Radiation Protection support.

Institute of Nuclear Power Operations (INPO): Experience has shown that a utility may need resources beyond in-house capabilities for the recovery from a nuclear plant emergency. One of the roles of INPO is to assist affected utilities by quickly applying the resources of the nuclear industry to meet the needs of an emergency. INPO has an emergency response plan that enables it to provide assistance to the affected utility in locating sources of emergency personnel, equipment and operational analysis.

American Nuclear Insurers (ANI): In the event of an extraordinary nuclear occurrence (as defined in the Price Anderson Law) ANI has plans prepared to provide prompt emergency funding to affected members of the public. ANI emergency assistance arrangements contemplate the mobilization and dispatch of emergency claims teams to directly dispense emergency assistance funds to affected members of the public.

9. Offsite Emergency Assistance:

The availability of local support services to assist the emergency forces has been ascertained and agreement letters from each organization in this section have been solicited. These letters are referenced in Appendix 2. All support, including support during hostile action events, is provided utilizing the National Incident Management System (NIMS) tool called the Incident Command System (ICS).

a. Ambulance Service

Twenty-four (24) hour ambulance service is provided by the Verplanck Fire District Ambulance with mutual aid backup from other ambulance services. Mutual aid backup from other ambulance services provides for additional Emergency Medical Services (EMS), ambulances and EMS personnel. Onsite procedures contain instructions that cover the call for assistance and the handling of the ambulance service personnel. Radio communication exists between the ambulance and local hospitals.

b. Medical

Onsite procedures contain instructions, which cover the request for medical assistance and the handling of patients. In the event that a patient should receive a massive radiation exposure, an expert medical consultant on the management of radiation injuries would be available.

c. Hospitals

The Hudson Valley Hospital Center at Peekskill / Cortlandt has agreed to accept patients from the Indian Point Energy Center site who have been injured, contaminated or irradiated. The hospital provides facilities such as an emergency room, a laboratory, a radiology department and a nuclear medicine department.

The Phelps Memorial Hospital Center, Sleepy Hollow, New York has agreed to serve as the backup hospital.

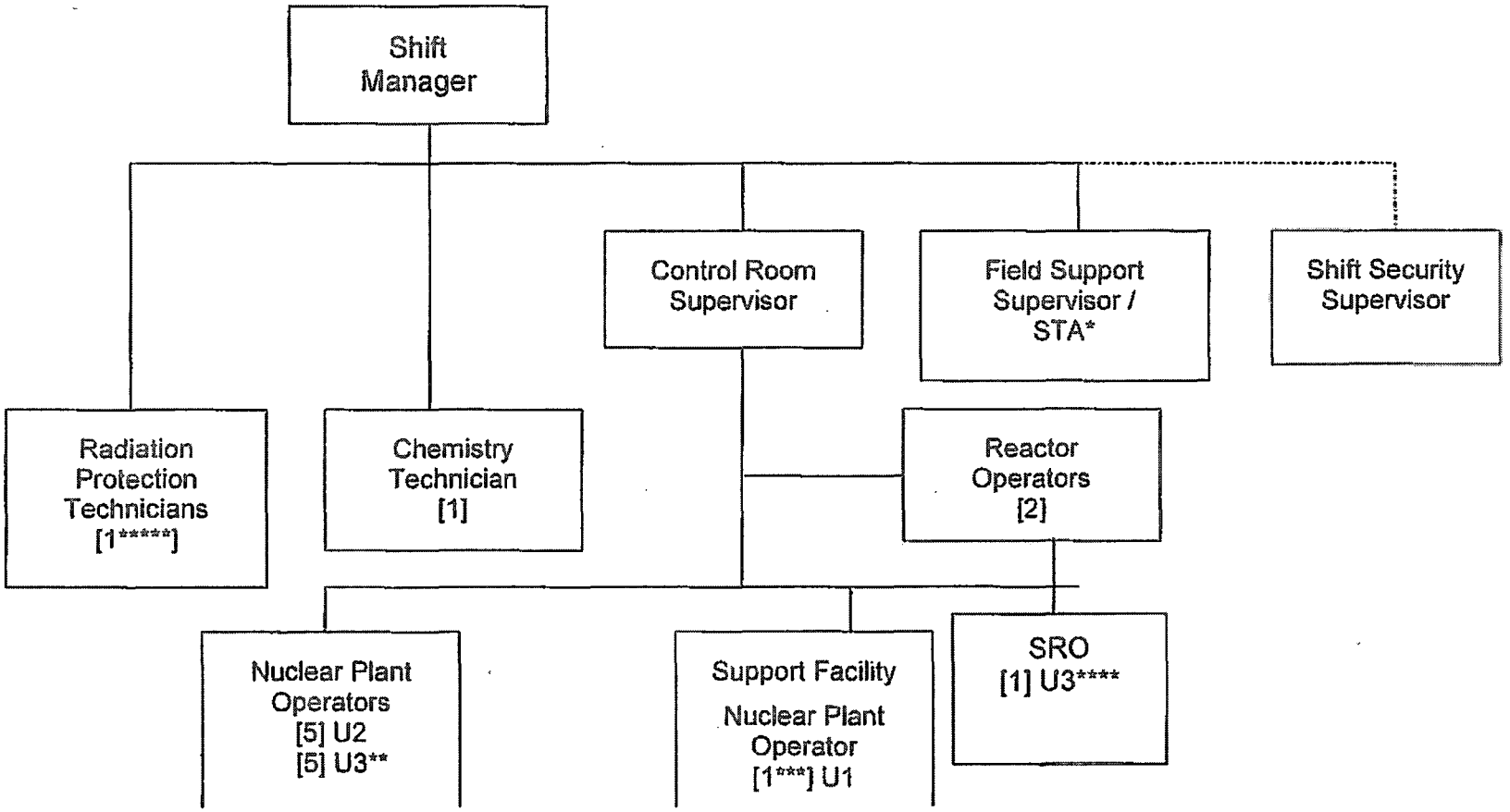
d. Law Enforcement

When notified that assistance is required, IPEC Security will notify the New York State Police which is the lead LLEA. As the situation demands, the Westchester County Police serve as the back-up to the State Police to provide timely reinforcement. The handling of security matters including those involving hostile action for the Indian Point Energy Center site is covered in the Security Safeguards Contingency Plan and Incident Response Plan.

e. Fire

Offsite firefighting support is provided by the Verplanck, Buchanan, and/or Montrose Fire Departments, as resources permit, with mutual aid backup from other fire departments. Mutual aid for fire response, fire apparatus, and firefighter resources is described in the Westchester County Fire Mutual Aid Plan.

Figure B-1.1 Indian Point Energy Center Station Watch Organization per Unit



*Consistent with NUREG-0737 and Technical Specifications, the Field Support Supervisor / Shift Technical Advisor is not required on shift during cold shutdown conditions.

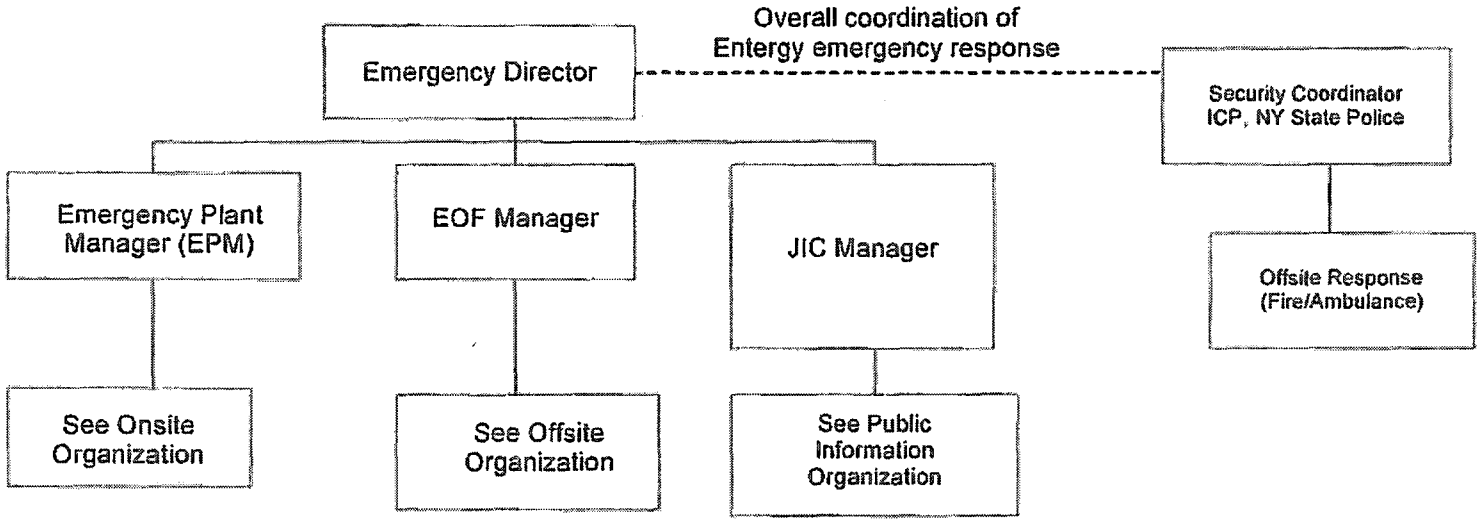
** One U3 NPO would be the communicator/notifications for both units

*** Unit 2 has additional NPO who maintains watch on Unit 1 systems

**** The U3 SRO would serve as FBL for both units

***** This RP Technician would assist at affected unit if needed

Figure B-1.2a Emergency Response Organization – Major Areas



- Overall coordination of onsite response
- Safety of onsite personnel
- Advise ED on plant status, radiological conditions and plant related EALs
- Security Interface

- Coordination of Entergy offsite response
- Safety of offsite Entergy personnel
- Advise ED on offsite radiological conditions and related EALs
- Assist ED in interfacing with offsite authorities

- Overall coordination of Entergy Public Information response
- Act as representative to the media
- Keep ED informed of any Public Information concerns

- Overall coordination of Security response
- Coordinate Offsite responders such as Fire & Ambulance

Figure B-1.2b Emergency Response Organization – Onsite

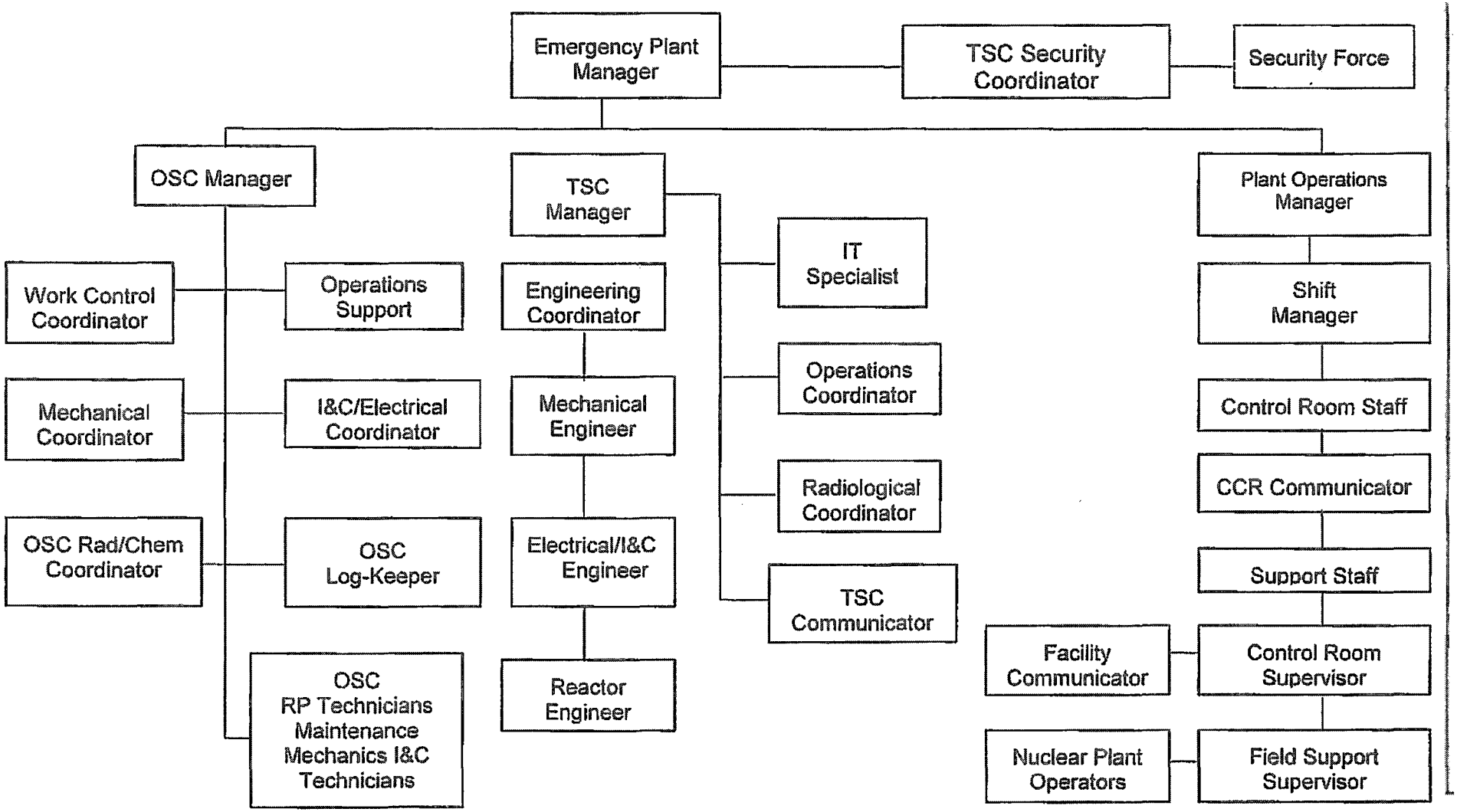


Figure B-1.2c Emergency Response Organization – EOF

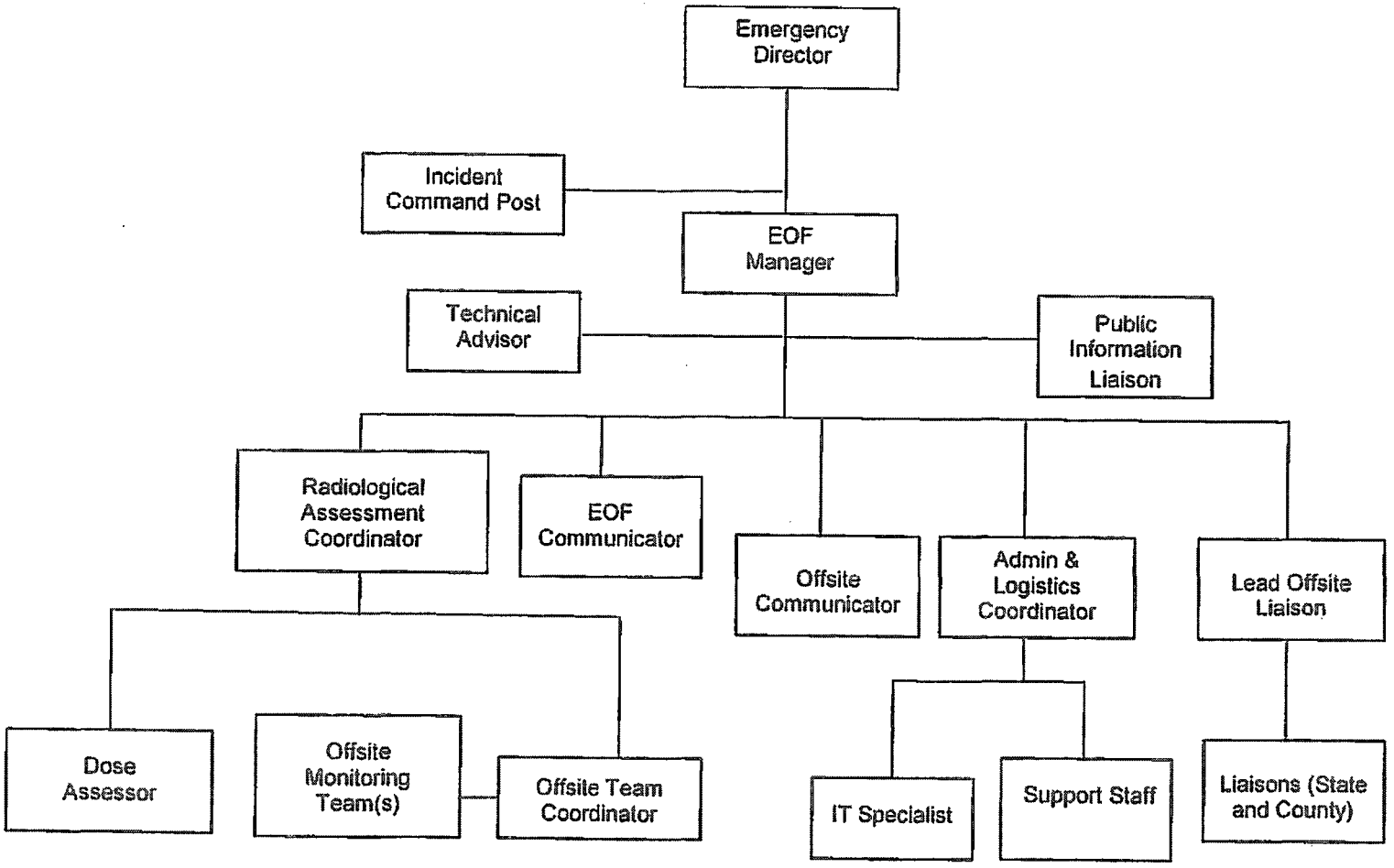


Figure B-1.2d Emergency Response Organization – Public Information

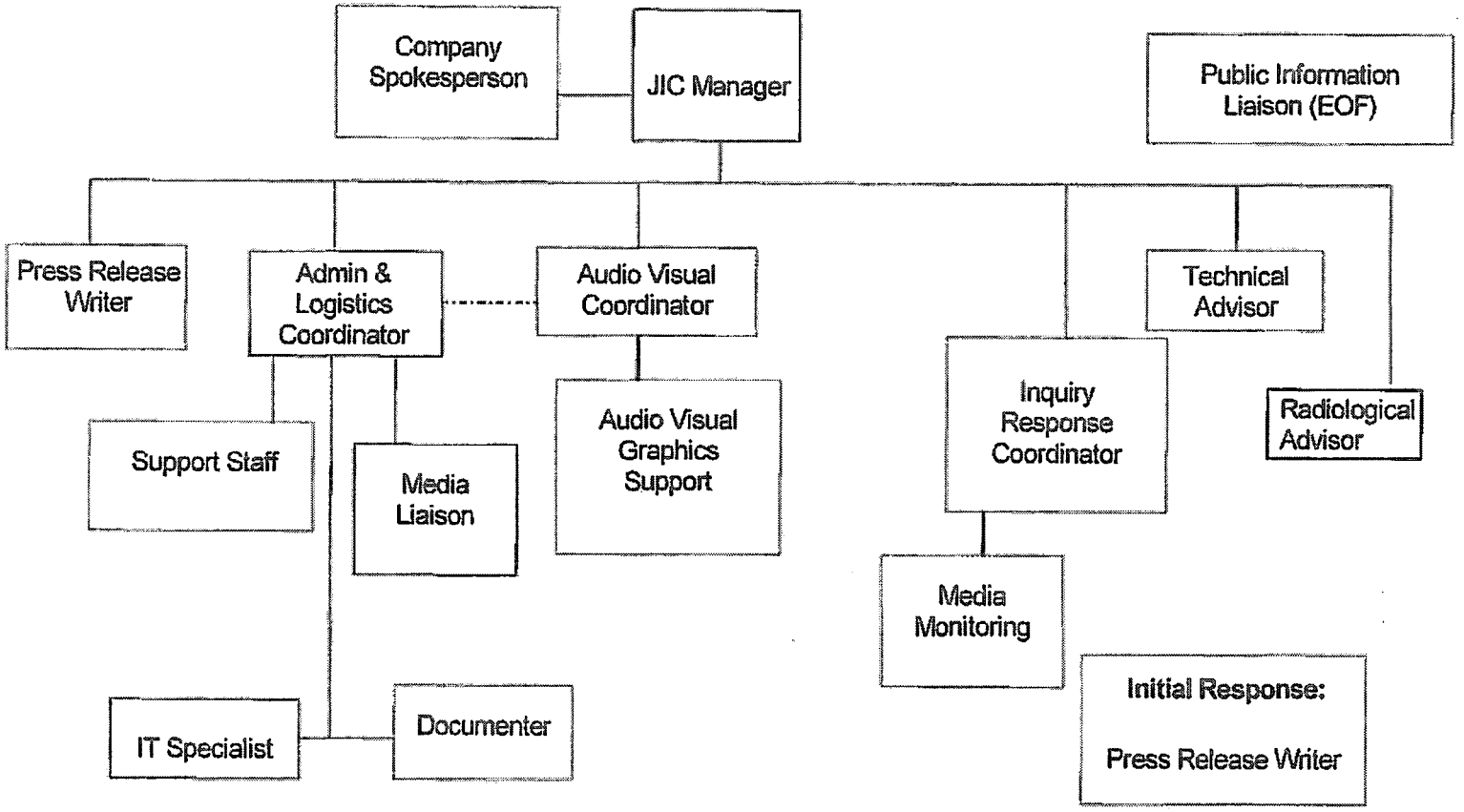


Figure B-1.3 Normal Station Organization

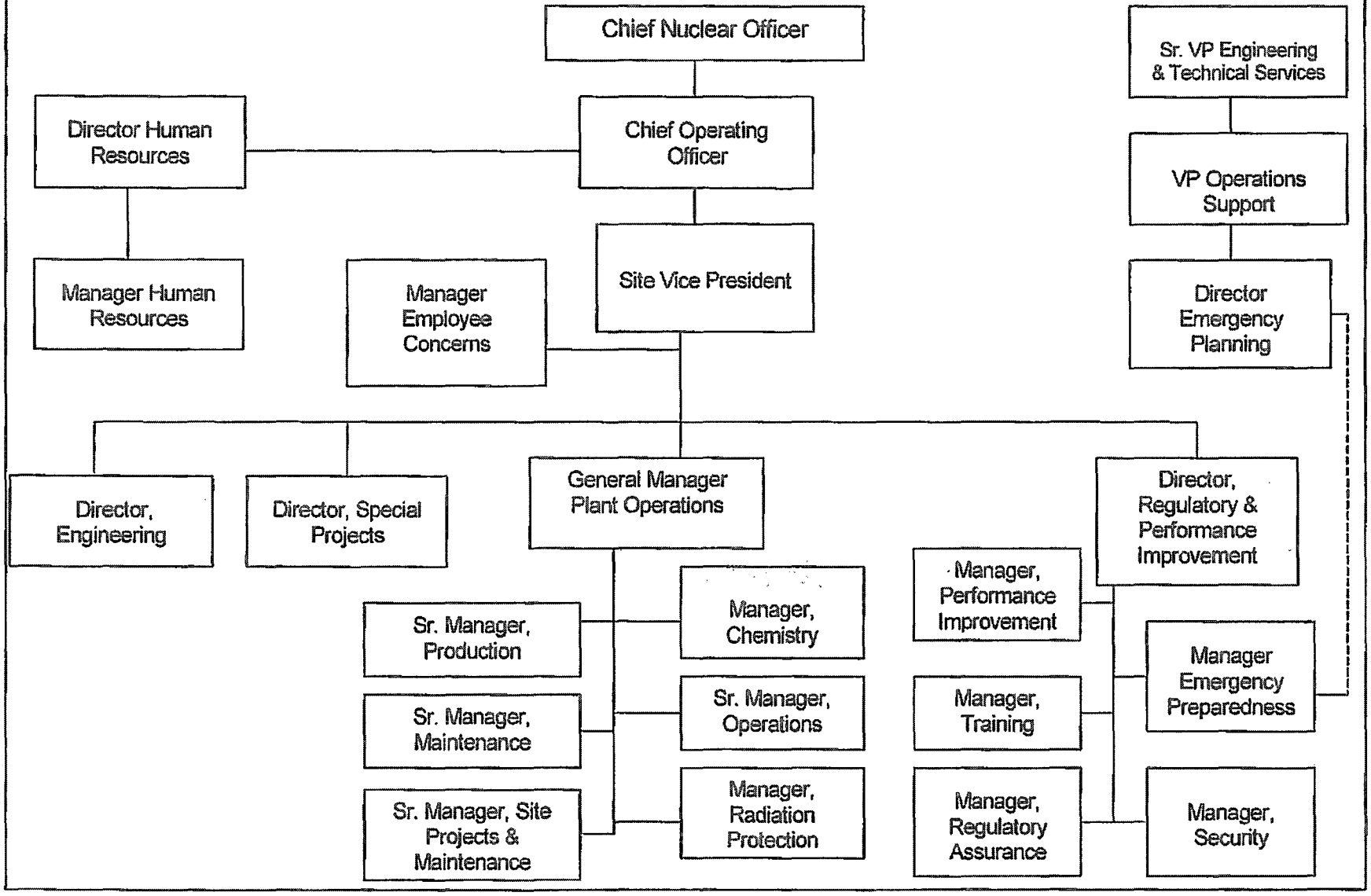


TABLE B – 1 Comparison of NUREG – 0654 to Indian Point Emergency Center

NUREG – 0654					Indian Point Energy Center ERO Staffing					Notes
Position No.	Position Title or Expertise / Major Task	On Shift	30 Min.	60 Min.	ERO Position, or Expertise or Job Title	On Shift U 2	On Shift U 3	On Shift U 1	60 Min.	[1] [2]
Plant Operations and Assessment										
1	Shift Supervisor (SRO)	1	--	--	Shift Manager	1	1	0	--	
2	Shift Foreman (SRO)	1	--	--	Control Room Supervisor	1	1	0	--	
3	Control Room Operators	2	--	--	Reactor Operators or Field Support Supervisor	2	2	0	--	[3]
4	Auxiliary Operators	2	--	--	Nuclear Plant Operators	5	4	1	--	[12] [13]
Emergency Direction and Control (Emergency Coordinator)					**Emergency Director**					
5	Shift Technical Advisor, Shift Supervisor or designated facility manager	1	--	--	Shift Manager or Control Room Supervisor	1	1	0	--	[4] [10]
Notification / Communication					**Communicator**					
6	Communicator – notify licensee, State, Local and Federal personnel and maintain communication	1	1	2	Nuclear Plant Operator from U3 provides notifications for both units	0	1		--	[5]
					Offsite Communicator plus				1	
					Any two of the following: Offsite Team Coordinator Control Room Communicator TSC Communicator				2	
Radiological Accident Assessment and Support of Operational Accident Assessment										
7	Senior Manager – EOF Director			1	Emergency Director or EOF Manager	--			1	
8	Senior Health Physics (HP) Expertise – Offsite Dose Assessment	--	1	--	Radiological Assessment Coordinator	--			1	

TABLE B – 1 Comparison of NUREG – 0654 to Indian Point Emergency Center

NUREG – 0654					Indian Point Energy Center ERO Staffing					Notes
Position No.	Position Title or Expertise / Major Task	On Shift	30 Min.	60 Min.	ERO Position, or Expertise or Job Title	On Shift			60 Min.	[1] [2]
9	Offsite Surveys	--	2	2	Two Teams of Field Monitors	--			4	[6]
10	Onsite (out-of-plant) Surveys	--	1	1	RP Technicians	--			2	
11	RP Technicians	1	1	1	RP Technicians	1	1	0	2	[11]
12	Rad / Chem Technicians	1	--	1	Chemistry Technicians	1	1	0	1	
Plant System Engineering, Repair and Corrective Action										
13	Shift Technical Advisor	1	--	--	Field Support Supervisor or Shift Technical Advisor	1	1	0	--	
14	Core / Thermal Hydraulics	--	1	--	Reactor Engineer	--			1	
15	Electrical	--	--	1	Electrical Engineer	--			1	
16	Mechanical	--	--	1	Mechanical Engineer	--			1	
17	Mechanical Maintenance / Radwaste Operator	1 --	-- --	1 1	Mechanical Maintenance	1	0		2	[7] [10]
18	Electrical Maintenance	1	1	1	Electrical Maintenance	0	1		2	[8] [10]
19	Instrument & Control Technician	--	1	--	Instrument & Control Technician	--			1	
Protective Actions (In-Plant)										
20	RP Technicians	2	2	2	RP Technicians or other qualified personnel	2			4	[9] [10]

TABLE B – 1 Comparison of NUREG – 0654 to Indian Point Emergency Center

NUREG – 0654					Indian Point Energy Center ERO Staffing					Notes
Position No.	Position Title or Expertise	On Shift	30 Min.	60 Min.	ERO Position, or Expertise or Job Title	On Shift			60 Min.	[1] [2]
Fire Fighting										
21	Fire Brigade	Fire Brigade per TS	Local Support		Fire Brigade	3	2	0	Local Support	[13] [14]
Rescue Operations and First Aid										
22	Rescue – First Aid	2	Local Support		Rescue – First Aid	2			Local Support	[10]
Site Access Control and Personnel Accountability										
23	Security Personnel	Per Security Plan			Security Personnel	Per Security Plan				
Totals		10	11	15		12	13	1	26	

(a) Per NUREG-0654, May be provided by shift personnel assigned other functions

(b) On-shift staffing is in accord with guidance of NRC's NSIR/DPR-ISG-01 Interim Staff Guidance and NEI 10-05 Assessment of On-Shift Emergency Response Organization Staffing and Capabilities.

Note:

[1] For Emergency Response Organization purposes resources may be shared between units. The unaffected unit in operation must maintain a Control Room Supervisor, one Reactor Operator and one Nuclear Plant Operator. All other shift positions may be shared. Appropriate cross-training is required.

[2] NUREG-0654, 30 minute and 60 minute response capabilities are combined into the 60-minute response capability for Indian Point Energy Center, as per originally approved Emergency Plan for both Unit 2 and Unit 3.

[3] The assessment function may be performed by the Field Support Supervisor

[4] The Emergency Coordinator (Emergency Director) position is initially filled by the Shift Manager or Control Room Supervisor. He is relieved of this duty by the Plant Operations Manager (POM) or the EOF Emergency Director who are one-hour responders.

[5] IPEC has a designated Communicator on shift (one Nuclear Plant Operator) and an Offsite Communicator in the EOF as a required one-hour responder. The additional two communicators are filled by the following: TSC Communicator and Offsite Team Coordinator – EOF.

[6] Offsite survey teams are filled by Offsite Monitoring Teams

[7] The repair and corrective action function would initially be performed by nuclear plant operators for minor mechanical maintenance activities. Two additional maintenance mechanics who are one hour responders would troubleshoot and correct equipment malfunctions designated in NUREG-0654 for Mechanical Maintenance / Radwaste Operator.

[8] The repair and corrective action function would initially be performed by nuclear plant operators for minor electrical maintenance activities. Two additional electrical maintenance mechanics who are one-hour responders would troubleshoot and correct equipment malfunctions.

[9] On shift and other available qualified personnel and the unaffected unit RP Technicians can fulfill the function for basic in-plant radiation protection activities. Four additional RP Technicians or other qualified personnel are required as one-hour responders.

[10] In accordance with NUREG-0654, this function may be provided by shift personnel assigned other functions.

[11] Credit for one RP Technician may be taken for the opposite Unit on-shift RP Technician

[12] One (1) Unit 1 NPO is designated for SSD.

[13] Three (3) Unit 2 NPO's and one (1) Unit 3 NPO are designated Fire Brigade Members.

[14] One (1) SRO designated FBL.

Table B-5 - Emergency Response Organization Functions

Position / Assigned Location	Reports To	Major Functions
Control Room (CR)		
Shift Manager	POM	Acts as ED until relieved.
Control Room Supervisor (CRS)	Shift Manger	Immediate supervision of plant operations
Field Support Supervisor/Shift Technical Advisor	Shift Manager	Provide technical support to operations shift
Reactor Operator (RO)[s]	CRS	Control Room operations / communications
Nuclear Plant Operator (NPO)[s] (unit 1 only)	CRS	Operates Unit 1 and support equipment
Nuclear Plant Operator (NPO)[s] (Nuclear, Conventional, Roving)	CRS	Operates equipment outside the control room, minor maintenance
Offsite (CCR) Communicator	CRS	Communications with outside organizations
Support Staff	Shift Manager	Provide plant data to TSC
Watch Chemistry Technician (OSC when activated)	Shift Manager	Provide chemistry support as needed, water chemistry
Watch Radiation Protection (RP) Technician (OSC when activated)	Shift Manager	Provide RP support as needed, rad monitoring, decon and surveillance
Facility Communicator	Shift Manager	Provides data to the other emergency response facilities
Plant Operations Manager (POM)	EPM	Relieves the SM as ED and acts as ED until relieved by the ED in the EOF Manager emergency response operations activities in the Control Room and keep the EPM informed of plant status and response activities. Advises ED on classification issues and other operational concerns.
Command Guard House (CGH)		
Security Shift Supervisor (SSS)	SM / POM	Supervises Security Force and acts as Lead Accountability Officer
Security Guard[s]	SSS	Provide physical control of plant areas, assist in accountability and search and rescue.

Table B-5 - Emergency Response Organization Functions

Position / Assigned Location	Reports To	Major Functions
Emergency Operations Facility (EOF)		
Emergency Director (ED)		Overall Direction of Entergy Emergency Response
EOF Manager	ED	Manages Entergy Offsite response activities
Technical Advisor	EOF Manager	Provide technical advice to ED and track EALs
Radiological Assessment Coordinator	EOF Manager	Directs offsite radiological assessment and control efforts
Dose Assessor	RAC	Leads dose assessment activities
Offsite Team Coordinator	RAC	Coordinates Field Monitoring Team Activities
Offsite Monitoring Teams	Offsite Team Coordinator	Perform Environmental Monitoring and Sampling outside the Protected Area
Admin and Logistics Coordinator	EOF Manager	Coordinate Entergy corporate support to the onsite Emergency Response Organization and provide logistics support to ERO
Support Staff	EOF Manager / Admin & Logistics Coordinator	Provide support to EOF Staff
IT Specialist	EOF Manager / Admin & Logistics Coordinator	Assist EOF Staff in operation of EOF Equipment
Offsite Communicator	EOF Manager	Communicate with offsite emergency organizations
Public Information Liaison	EOF Manager	Provide information to JIC
Lead Offsite Liaison	EOF Manager	Liaison to Offsite Representatives arriving at the EOF and coordinates information flow to State and County Liaisons located at offsite EOCs
County & State Liaisons (may be located at offsite EOCs)	Lead Offsite Liaison	Assist offsite authorities in coordinating emergency response.
Incident Command Post	ED	Coordinate overall security response; interface with local law enforcement.
EOF Communicator	EOF Manager	Communicates with other ERFs

Table B-5 - Emergency Response Organization Functions

Position / Assigned Location	Reports To	Major Function
Operations Support Center (OSC)		
Operations Support Center (OSC) Manager	EPM	Manages repair and assessment activities of team sent into the plant.
Work Control Coordinator	OSC Manager	Assemble, brief, dispatch, track and debrief OSC teams sent out from the OSC
OSC Rad/Chem Coordinator	OSC Manger	Coordinate radiological controls inside the Protected Area and assist in coordination of chemistry sampling
Mechanical Coordinator	OSC Manager	Coordinate Maintenance activities
I&C/Electrical Coordinator	OSC Manager	Coordinate I&C activities
Operations Support	OSC Manager	Coordinate Operations support to the CCR
Radiation Protection Technicians	Rad/Chem Coordinator	Perform radiological surveys, sampling and analysis as needed, provide RP coverage for OSC operations
Chemistry Technician	Rad/Chem Coordinator	Perform chemistry sampling and analysis as needed, assist in OSC operations
Maintenance Mechanic(s)	Maintenance Coordinator	Perform mechanical repairs and assessment activities as needed
Instrument & Control (I&C) Technician(s)	I&C Coordinator	Perform I&C repairs and assessment activities as needed
OSC Operators	Operations Support	Operate plant systems as directed by Operations Support in an SAE or GE. Assist OSC teams in repair and assessment activities.
OSC Log-Keeper	OSC Manager	Coordinate Accountability with Security Coordinator and as necessary verify/set up equipment. Provide support as needed.

Table B-5 - Emergency Response Organization Functions

Position / Assigned Location	Reports To	Major Functions
Technical Support Center (TSC)		
Emergency Plant Manager (EPM)	ED	Manage emergency response activities inside the Protected Area and keep the ED informed of plant status and response activities.
Technical Support Center (TSC) Manager	EPM	Manage technical assessment activities.
Engineering Coordinator	TSC MGR	Coordinate TSC Engineering Assessment Activities
Reactor Engineer	Engineering Coordinator	Perform Core Physics Assessments and assist EPM in implementation of Severe Accident Management Guidelines
Mechanical Engineer	Engineering Coordinator	Perform Mechanical Engineering Assessments
Electrical / I&C Engineer	Engineering Coordinator	Perform Electrical / I&C Engineering Assessments
Operations Coordinator	TSC MGR	Perform Operations Engineering Assessments
TSC Radiological Coordinator	TSC MGR	Radiological Oversight
IT Specialist	TSC MGR	ERDS Activation/Verification and maintain IT equipment (computers, phones) operational.
TSC Security Coordinator	TSC MGR	Direct Physical Security
TSC Communicator	TSC MGR	Perform TSC communications as needed

Table B-5 - Emergency Response Organization Functions

Position / Assigned Location	Reports To	Major Functions
Joint Information Center (JIC)		
Company Spokesperson	JIC Manager	Act as official spokesperson for Entergy, coordinate public information with other Public Information Officers
JIC Manager	ED	Manage operations of the Joint Information Center
Technical Advisor	JIC Manager	Provide technical expertise to JIC Staff
Admin & Logistics Coordinator	JIC Manager	Maintains access control to the JIC. Ensures distribution of press releases.
Documenter	JIC Admin & Logistics Coordinator	Maintain facility log on WebEOC. Ensure timeliness of facility briefings.
IT Specialist	JIC Admin & Logistics Coordinator	Assist JIC Staff with computer hardware and software use
Audiovisual Coordinator	JIC Manager	Manages Audio/Video operations
Support Staff	Admin & Logistics Coordinator	Provide support to JIC Personnel
Press Release Writer	JIC Manager	Writes News Releases
Radiological Advisor	JIC Manager	Provides radiological information from the EOF to the JIC staff
Inquiry Response Coordinator	JIC Manager	Interacts with New York State and Counties on information and rumors
Media Monitoring	Inquiry response Coordinator	Monitor media for rumors and items to be addressed in news releases or media briefings
Media Liaison	Admin & Logistics Coordinator	Acts as Entergy's interface for media present at the JIC
Audio Visual Graphics Support	Audio Visual Coordinator	Supports A/V equipment and graphics at the JIC

Part 2: PLANNING STANDARDS AND CRITERIA

Section C: Emergency Response Support and Resources

This section describes the provisions for requesting and effectively utilizing support resources and for accommodating State and local staff at the Indian Point Energy Center Emergency Operations Facility (EOF).

1. Federal Response Support and Resources

   Assistance is available from Federal agencies through the Federal Radiological Emergency Response Plan (FRERP). The primary Federal agencies that provide assistance to the State and Indian Point Energy Center, respectively, are the Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA) and the Nuclear Regulatory Commission (NRC). Other Federal agencies, through FRERP, provide assistance to the State and Local Authorities in an emergency.

   a. Sections A and B of this Plan identify the specific ERO positions by title who are authorized to request Federal assistance.

   b. Federal agencies that may provide assistance in direct support of Indian Point Energy Center in the event of an accident are identified in Section A of this plan. If needed, Federal resources are made available to Indian Point Energy Center in an expeditious and timely manner.

   c. Each Indian Point Energy Center emergency response facility has the equipment and communications capability necessary for a continuous high level of response, interaction and communication among key personnel during emergency conditions. The Technical Support Center (TSC) is able to accommodate NRC representatives. A conference/working area has been provided for their use. The EOF/AEOF has space to accommodate NRC representatives as well as representatives from DHS/FEMA, State and key local authorities.

      In addition to Indian Point Energy Center facilities and equipment, State and local facilities and equipment are available to support the Federal response.

2. Liaisons

   a. The NRC, DHS/FEMA, State, and local authorities may dispatch representatives to the EOF/AEOF where accommodations have been provided.

   b. At the Alert level and above, Entergy Offsite Liaisons are dispatched to the State and local government EOCs to act as communications liaisons and to provide clarification of emergency response information.

3. Radiological Laboratories

In addition to Indian Point Energy Center's radiological assessment facilities, contracted services may be utilized to analyze inplant and offsite environmental samples. Outside analytical assistance may be requested from State and Federal agencies and other licensees if the offsite radiological monitoring and environmental sampling operation exceeds the capacity of the Indian Point Energy Center capabilities.

The availability of commercial laboratory/analytical services used by Entergy facilities has been ensured.

4. Other Assistance

Contracted services are available and may be used in support of an emergency response at the Indian Point Energy Center. The availability of services has been ascertained and agreement letters are contained listed in Appendix 2.

Though not a typical contracted service, the Institute of Nuclear Power Operation (INPO) is able to provide:

- Assistance in locating sources of emergency manpower and equipment;
- Access to an organization of industry experts who could advise the utility on technical matters, and;
- Analysis of operational aspects of the incident.

Additional facilities, organizations and individuals as listed in the Emergency Telephone Directory (ETD), are available and may be used in support of emergency response.

Part 2: PLANNING STANDARDS AND CRITERIA

Section D: Emergency Classification System

This section describes the classification and emergency action level scheme used to determine the minimum response to an abnormal event at the Station. This scheme is based on Indian Point Energy Center Units 2 & 3 systems, effluent parameters and operating procedures. The initial response of Federal, State and local agencies is dependent upon information provided by the Indian Point ERO. Indian Point Energy Center emergency planning personnel work closely with State and local agencies to ensure consistency in classification schemes and procedural interfaces.

Indian Point Energy Center maintains the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and promptly declares the emergency condition as soon as possible following identification of the appropriate emergency classification level.

1. Emergency Classification:

   This Plan is based on consideration of conceivable consequences of potential situations ranging from incidents where effects on plant and personnel are negligible to highly unlikely releases of radioactivity, which could affect members of the public. The emergency classification of these conditions, both radiological and non-radiological, indicates the relative severity for immediate implementation of response actions. The four (4) major classifications increase in overall severity from Notification of Unusual Event (least severe), Alert, Site Area Emergency, General Emergency (most severe).

   These mutually exclusive classifications cover the postulated spectrum of potential and actual emergencies. Each classification is associated with a particular set of immediate actions. Each classification is characterized by certain initiating symptoms or events called Emergency Action Levels (EALs). These action levels include specific sets of plant parameters (i.e., instrument indications, system status, etc.) or events that are used to determine the appropriate emergency classification. A brief explanation of the four classification levels follows:

   Notification of Unusual Event (NUE)

   A Notification of Unusual Event classification is used to denote events that are in progress or have occurred, which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.

This is the least severe of the four (4) classifications. The purpose of this classification is primarily notification. These notifications provide for (1) assurance that the first step in any response later found to be necessary has been carried out, (2) bringing the operating staff to a state of readiness, and (3) providing systematic handling of unusual events information and decision making.

The Shift Manager/ED will ensure:

a) Notification of State and local offsite authorities within 15 minutes of classifying the event;

b) Required Station Management and the NRC are informed of the nature of the unusual condition;

c) Optional augmentation of on-shift resources as needed, which may include full or partial staffing of the Technical Support Center, Operations Support Center, Emergency Operations Facility and/or the Joint Information Center;

d) Continued assessment and response as necessary;

e) Escalation to a more severe class, if appropriate;

OR

f) Close out with verbal summary to offsite authorities followed by written summary within 24 hours.

State and local offsite authorities would, as directed by their respective Emergency Plans:

a) Provide fire or security assistance if requested;

b) Escalate to a more severe class, if appropriate;

OR

c) Standby until a verbal closeout.

Alert

An Alert classification indicates events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of Hostile Action. Any releases are expected to be limited to small fractions of the EPA PAG exposure levels.

The purpose of the Alert is to (1) ensure that emergency personnel are readily available to respond if the situation becomes more serious or to perform confirmatory radiation monitoring if required, and (2) provide the offsite authorities with current information on plant status and parameters. Where radiological releases to the environment have occurred, it is possible that the site boundary doses will exceed 10 mRem Total Effective Dose Equivalent (TEDE) or 10 mRem/hr external exposure rate.

The Shift Manager/ED will ensure:

a) Initiation of activation of the ERO which results in the staffing of the Technical Support Center, Operations Support Center, Emergency Operations Facility and the Joint Information Center;

b) Notification of State and local offsite authorities within 15 minutes of classifying the event;

c) Prompt notification of the NRC (not to exceed one hour);

d) Continued assessment and response as necessary;

e) Dispatch of field monitoring teams and establish associated communications, as necessary;

f) Periodic plant status updates are provided to offsite authorities (approximately every 30 minutes or period agreed upon with offsite authorities);

g) Meteorological assessments are provided to offsite authorities and, if any releases are occurring, dose estimates for actual release;

h) Escalation to a more severe class, if appropriate;

OR

i) Close out in emergency class by verbal discussion with offsite authorities followed by written summary within eight (8) hours of entering recovery after an Alert or higher classified event.

State and local offsite authorities would, as directed by their respective Emergency Plans:

a) Provide fire or security assistance if requested;

b) Augment resources by activating EOC 's;

c) Augment resources and bring primary response centers and Emergency Alert System (EAS) to standby status;

d) Alert key emergency personnel to standby status including monitoring teams and associated communications;

e) Provide confirmatory offsite radiation monitoring and ingestion pathway dose projections if actual releases substantially exceed technical specification limits;

f) Maintain Alert status until verbal closeout or escalation.

Site Area Emergency (SAE)

A Site Area Emergency indicates events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public, or Hostile Action that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to, equipment needed for protection of the public. Any releases are

not expected to result in exposure levels which exceed EPA PAG exposure levels beyond the site boundary.

The purpose of the Site Area Emergency declaration is to (1) ensure that response centers are manned, (2) ensure that monitoring teams are dispatched, (3) ensure that personnel required for evacuation of near-site areas are at duty stations if the situation becomes more serious, (4) provide current information for and consultation with offsite authorities and public, (5) provide updates for the public through offsite authorities.

Where radiological releases to the environment have occurred, it is possible that the site boundary doses will exceed 100 mRem Total Effective Dose Equivalent (TEDE), 500 mRem CDE Thyroid, 100 mRem/hr external exposure rate, or 500 mRem/hr Thyroid Exposure Rate (for one hour of inhalation).

The Shift Manager/ED will ensure:

a) Initiation of activation of the ERO which results in the staffing of the Technical Support Center, Operations Support Center, Emergency Operations Facility and the Joint Information Center;

b) Notification of State and local offsite authorities within 15 minutes of classifying the event;

c) Prompt notification of the NRC (not to exceed one hour);

d) Continued assessment and response as necessary;

e) Dispatch of field monitoring teams and establish associated communications;

f) An individual provides for plant status updates to offsite authorities and periodic news media briefings (perhaps joint with offsite authorities);

g) Senior technical and management staff on-site are made available for consultation with NRC and State on a periodic basis;

h) Meteorological and dose estimates are provided to offsite authorities for actual releases via a dedicated individual or automated data transmission;

i) Release and dose projections based on available plant condition information and foreseeable contingencies are provided to appropriate agencies;

j) Accountability process is initiated;

k) Escalation to General Emergency class, if appropriate;

OR

l) Close out by briefing of offsite authorities at Emergency Operations Facility and by phone followed by written summary within eight (8) hours of close.

State and local offsite authorities would as directed by their respective Emergency Plans:

a) Provide any assistance requested;

b) If sheltering near the site is desirable, activate public notification system;

c) Provide public within at least ten miles with periodic updates on emergency status;

d) Augment resources by activating EOC's and any other primary response centers;

e) Dispatch key emergency personnel including monitoring teams and establish associated communications;

f) Alert other emergency personnel to standby status (e.g., those in need for evacuation) and dispatch personnel to near site duty stations;

g) Provide offsite monitoring results to licensee, DOE and others and jointly assess them;

h) Continuously assess information from licensee and offsite monitoring teams with regard to changes to protective action already initiated for public and mobilizing evacuation resources;

i) Recommend placing milk animals within 2 miles on stored feed and assess the need to extend the distance;

j) Provide media briefings, perhaps with a licensee;

k) Maintain Site Area Emergency status until closeout or escalation.

General Emergency (GE)

A General Emergency indicates events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or Hostile Action that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA PAG exposure levels beyond the site boundary.

The purpose of the General Emergency is to (1) initiate predetermined protective actions for the public, (2) provide continuous assessment of information from licensee and offsite organization measurements, (3) initiate additional measures as indicated by actual or potential releases, (4) provide consultation with offsite authorities, and (5) provide updates for the public through offsite authorities. Where radiological releases to the environment have occurred, it is possible that the site boundary doses could exceed 1000 mRem Total Effective Dose Equivalent (TEDE) and 5000 mRem CDE Thyroid, 1000 mRem/hr External Exposure Rate, or 5000 mRem/hr Thyroid Exposure Rate (for one hour of inhalation).

The Shift Manager/ED will ensure:

a) Initiation of activation of the ERO which would staff the Technical Support Center, Operations Support Center, Emergency Operations Facility and the Joint Information Center;

b) Notification of State and local offsite authorities within 15 minutes of classifying the event;

c) A recommendation is made, as a minimum, sheltering or evacuation for 2 mile radius and 5 miles downwind and assess need to extend distances; consider advisability of evacuation (projected time available vs. Evacuation Time Estimates);

d) Prompt notification of the NRC (not to exceed one hour);

e) Continued Assessment and response as necessary;

f) Dispatch of field monitoring teams and associated communications;

g) An individual is provided for plant status updates to offsite authorities and periodic news media briefings (perhaps joint with offsite authorities);

h) Senior technical and management staff on-site are made available for consultation with NRC and State on a periodic basis;

i) Meteorological and dose estimates are provided to offsite authorities for actual releases;

j) Release and dose projections based on available plant condition information and foreseeable contingencies are performed and provided to offsite authorities;

k) Accountability process is initiated;

l) Close out by briefing of offsite authorities at Emergency Operations Facility and by phone followed by written summary within eight hours of closeout.

State and local offsite authorities would as directed by their respective Emergency Plans:

a) Provide any assistance requested;

b) Activate immediate public notification of emergency status and provide public periodic updates;;

c) Augment resources by activating EOC's and any other primary response centers;

d) Dispatch key emergency personnel including monitoring teams and establish associated communications;

e) Dispatch other emergency personnel to duty stations within 5 mile radius and alert all others to standby status;

f) Provide offsite monitoring results to licensee, DOE and others and jointly assess them;

g) Continuously assess information from licensee and offsite monitoring teams with regard to changes to protective actions;

h) Recommend placing milk animals within 10 miles on stored feed and assess need to extend distance;

i) Provide news media briefings, perhaps with a licensee;

j) Maintain General Emergency status until closeout.

Classification Downgrading

The Indian Point Energy Center policy on Classification downgrading is as follows:

All events once declared shall remain in effect until: 1. Such time as conditions warrant termination of the event and entry into the Recovery Phase or 2. the event is re-classified at a higher level.

2. Emergency Action Levels:

The postulated accidents analyzed in each units' Final Safety Analysis Report (FSAR), the example initiating conditions found in NEI 99-01 REV 5 "Methodology for Development of Emergency Action Levels" were evaluated to establish an emergency classification and emergency action level scheme. NEI 99-01 REV 5 has been accepted by the NRC as an alternative to NUREG-0654-REV 1.

This classification scheme is presented in six categories of EALs, which show the parameters for establishing each emergency classification.

The specific instruments, parameters or equipment statuses that identify the overall severity of the emergency condition and the actions to be taken by the facility staff are identified in the Plan Implementing Procedures. The Emergency Action Levels (EALs) are grouped into six categories to simplify their presentation and promote a rapid understanding by their users. (See Table D-1 for a description of each of the EAL initiating conditions for each EAL category).

These categories are:

(1) Abnormal Rad Release/Rad Effluent

(2) Hazards

(3) ISFSI

(4) Systems

(5) Fission Product Barriers

(6) Cold Shutdown/Refueling System Malfunction

Table D-1, Summary of IPEC EAL Initiating Conditions, provides a description of the initiating conditions associated with the above categories which would cause the Plan to be implemented. Detailed emergency action levels are provided in a Plan Implementing Procedure and an associated EAL Technical Bases Administrative Procedure.

3. Offsite Classification Systems:

Indian Point Energy Center works with the State of New York and local authorities to ensure consistency between classification schemes. The content of the Emergency Action Levels is reviewed with the State and local authorities on an annual basis.

4. Offsite Emergency Procedures:

Indian Point Energy Center works with the State of New York and local authorities to ensure that procedures are in place that provide for emergency actions to be taken which are consistent with the protective actions recommended by Indian Point Energy Center accounting for local offsite conditions that exist at the time of the emergency.

Table D-1

SUMMARY OF IPEC EAL INITIATING CONDITIONS

Category A – Abnormal Radiation Levels/Radiological Effluent

This category encompasses the spectrum of potential uncontrolled radionuclide releases via liquid or gaseous effluents for all modes of operation. It also includes other incidents related to high levels of radioactivity, but which may not result in a release to the environment. Potential sources of radionuclide releases are from the Primary Auxiliary Building (PAB), Vapor Containment (VC) and Fuel Storage Building (FSB). Appropriate monitoring is provided for potential gaseous and liquid release paths. The ICs within this category are keyed to Radiation Monitoring System (RMS) indications, radiological survey results and offsite dose assessment calculations.

The initiating conditions within this category are as follows:

UNUSUAL EVENT

1. Any release of gaseous or liquid radioactivity to the environment > 2 times the radiological effluent ODCM limits for ≥ 60 minutes.

2. Unplanned rise in plant radiation levels.

ALERT

1. Any release of gaseous or liquid radioactivity to the environment that exceeds significant multiples of the Offsite Dose Calculation Manual (ODCM) limits for 15 minutes or longer.

2. Damage to irradiated fuel or loss of water level that has or will result in the uncovering of irradiated fuel outside the reactor vessel

3. Rise in radiation levels within the facility that impedes operation of systems required to maintain plant safety functions.

SITE AREA EMERGENCY

1. Offsite dose resulting from an actual or imminent release of gaseous radioactivity greater than 100 mRem TEDE or 500 mRem thyroid CDE for the actual or projected duration of the release.

GENERAL EMERGENCY

1. Offsite dose resulting from an actual or imminent release of gaseous radioactivity greater than 1,000 mRem TEDE or 5,000 mRem thyroid CDE for the actual or projected duration of the release using actual meteorology

TABLE D-1 (Continued)
SUMMARY OF IPEC EAL INITIATING CONDITIONS

CATEGORY H - Hazards

This category encompasses the spectrum of man-caused or non-naturally occurring hazards that jeopardize the level of safety of the plant in all modes of operation. The ICs are keyed to offsite notifications or personal observation and assessment.

This category also encompasses the spectrum of naturally occurring events that jeopardize the level of safety of the plant. The ICs are keyed to specific instrument indications, offsite notifications or personal observation and assessment.

This category also encompasses the spectrum of security infractions as addressed in the Security Contingency Plan. The ICs are keyed to notification from the security force or another credible source of a site specific credible threat.

This category is the location for the miscellaneous ICs that are provided to allow for Emergency Director judgment classifications.

The initiating conditions within this category are as follows:

UNUSUAL EVENT

1. Confirmed security condition or threat which indicates a potential degradation in the level of safety of the plant.

2. Other conditions exist which in the judgment of the Emergency Director warrant declaration of an Unusual Event.

3. Fire within the Protected Area not extinguished within 15 minutes of detection or explosion within the Protected Area.
4. Release of toxic, corrosive, asphyxiant or flammable gases deemed detrimental to normal plant operations.

5. Natural or destructive phenomena affecting the Protected Area.

ALERT

1. Hostile Action within the Owner Controlled Area or airborne attack threat.

TABLE D-1 (Continued)
SUMMARY OF IPEC EAL INITIATING CONDITIONS

CATEGORY H - Hazards and Other Conditions Affecting Plant Safety (Cont'd)

2. Other conditions exist which in the judgment of the Emergency Director warrant declaration of an Alert.

3. Control Room evacuation has been initiated.

4. Fire or Explosion affecting the operability of plant safety systems required to establish or maintain safe shutdown.

5. Access to a vital area is prohibited due to release of toxic, corrosive, asphyxiant or flammable gases which jeopardizes operation of systems required to maintain safe operations or safely shutdown the reactor

6. Natural or destructive phenomena affecting Vital Areas.

SITE AREA EMERGENCY

1. Hostile Action within the Protected Area.

2. Other conditions exist which in the judgment of the Emergency Director warrant declaration of a Site Area Emergency.

3. Control Room evacuation has been initiated and plant control cannot be established.

GENERAL EMERGENCY

1. Hostile Action resulting in loss of physical control of the facility.

2. Other conditions exist which in the judgment of the Emergency Director warrant declaration of a General Emergency.

TABLE D-1 (Continued)
SUMMARY OF IPEC EAL INITIATING CONDITIONS

CATEGORY E – ISFSI Malfunction

This category addresses events of sufficient magnitude that a loaded spent fuel dry cask storage confinement boundary is damaged or violated.

UNUSUAL EVENT

1. Damage to a loaded cask confinement boundary.

TABLE D-1 (Continued)
SUMMARY OF IPEC EAL INITIATING CONDITIONS

CATEGORY S – System Malfunction

This category encompasses the spectrum of events related to the reactor and its supporting systems that may occur in the power operations, startup, hot standby and hot shutdown operating modes. In general, the ICs relate to equipment or system malfunctions or failures. The ICs include RCS leakage, loss of Control Room instrument indications and failure of the Reactor Protection System as well as those events dealing with power losses. This category also includes inadvertent criticality and loss of decay heat removal capability ICs.

The initiating conditions within this category are as follows:

UNUSUAL EVENT

1. Loss of all offsite AC power to emergency buses for 15 minutes or longer.

2. Unplanned loss of safety system annunciation or indication in the control room for 15 minutes or longer.

3. RCS Leakage.

4. Loss of all onsite or offsite communications capabilities.

5. Fuel clad degradation.

6. Inadvertent criticality.

7. Inability to reach required shutdown within Technical Specification limits

ALERT

1. AC power capability to safeguards buses reduced to a single power source for 15 minutes or longer such that any additional single failure would result in loss of all AC power to safeguard buses.

2. Automatic trip fails to shutdown the reactor and the manual actions taken from the reactor control console are successful in shutting down the reactor.

TABLE D-1 (Continued)
SUMMARY OF IPEC EAL INITIATING CONDITIONS

CATEGORY S – System Malfunction (Continued)

3. Unplanned loss of safety system annunciation or indication in the control room with either (1) a significant transient in progress, or (2) compensatory indicators unavailable.

SITE AREA EMERGENCY

1. Loss of all offsite power and loss of all onsite AC power to safeguards buses for 15 minutes or longer.

2. Automatic trip fails to shut down the reactor and manual actions taken from the reactor control console are not successful in shutting down the reactor

3. Loss of all vital DC power for 15 minutes or longer.

4. Inability to monitor a significant transient in progress.

GENERAL EMERGENCY

1. Prolonged loss of all offsite and all onsite AC power to safeguards buses.

2. Automatic trip and all manual actions fail to shut down the reactor and indication of an extreme challenge to the ability to cool the core exists

TABLE D-1 (Continued)
SUMMARY OF IPEC EAL INITIATING CONDITIONS

CATEGORY F – Fission Product Barrier Degradation

This category addresses losses and potential losses of the three fission product barriers – fuel clad, RCS and containment. The category is designed for events in the power operations, startup, hot standby and hot shutdown modes of operation.

The initiating conditions within this category are as follows:

UNUSUAL EVENT

1. Any loss or any potential loss of Containment.

ALERT

1. Any loss or any potential loss of either Fuel Clad or RCS

SITE AREA EMERGENCY

1. Loss or potential loss of any two barriers.

GENERAL EMERGENCY

1. Loss of any two barriers and loss or potential loss of the third barrier.

TABLE D-1 (Continued)
SUMMARY OF IPEC EAL INITIATING CONDITIONS

CATEGORY C – Cold Shutdown/Refueling System Malfunction

This category encompasses the spectrum of events related to the reactor and its supporting systems that may occur in the shutdown and refueling modes. These include RCS leakage and loss of reactor vessel inventory events as well as those events dealing with power losses.

This category also encompasses events that directly affect the integrity of the reactor core when in cold shutdown or refueling. This includes inadvertent criticality and loss of decay heat removal capability.

The initiating conditions within this category are as follows:

UNUSUAL EVENT

1. RCS leakage.

2. Unplanned loss of reactor vessel inventory.

3. Unplanned loss of decay heat removal capability with irradiated fuel in the reactor vessel.

4. AC power capability to safeguards buses reduced to a single power source for 15 minutes or longer such that any additional single failure would result in loss of all AC power to safeguards buses

5. Loss of required DC power for 15 minutes or longer

6. Inadvertent criticality.

7. Loss of all onsite or offsite communications capabilities.

ALERT

1. Loss of reactor vessel inventory.

2. Inability to maintain plant in cold shutdown.

3. Loss of all offsite and all onsite AC power to safeguards buses for 15 minutes or longer.

TABLE D-1 (Continued)
SUMMARY OF IPEC EAL INITIATING CONDITIONS

CATEGORY C – Cold Shutdown/Refueling System Malfunction (Cont'd)

SITE AREA EMERGENCY

1. Loss of reactor vessel inventory affecting core decay heat removal capability.

GENERAL EMERGENCY

1. Loss of reactor vessel inventory affecting fuel clad integrity with Containment challenged.

Part 2: PLANNING STANDARDS AND CRITERIA

Section E: Notification Methods and Procedures

This section describes the notification of State and local response organizations and Indian Point Energy Center emergency response personnel. It outlines the content of initial and follow-up messages to response organizations within the Indian Point Energy Center (Units 1, 2 & 3) Plume Exposure Pathway Emergency Planning Zone (EPZ).

1. Response Organization Notification:

   Indian Point Energy Center, in cooperation with State and local authorities, has established mutually agreeable methods for notification of response organizations consistent with the emergency classification and action level scheme. Notification methods to offsite agencies include a means of verification or authentication such as the use of dedicated communications networks or providing call back verification phone numbers.

   Emergency events that involve both Units (2&3) (i.e., tornado or earthquake) and when the classification for each Unit is the same, shall be reported as affecting both Units.

   In situations when both Units are affected by emergency events, but the events are not related or the classification for each Unit is different, notification will be made for the highest classification. Clarification of the relationship between the classification levels determined for the Units should be provided in the periodic updates.

   The emergency conditions classified in Section D involve the alerting or activation of progressively larger segments of the total emergency organization. This section describes the communication steps taken to alert and activate authorities for each classification of emergency.

   a. Notification of Unusual Event

      1) A Notification of Unusual Event is declared by the Shift Manager (or Control Room Supervisor if the SM is unavailable) if any Unusual Event threshold listed in Section D (Table D-1) is met or exceeded.

      2) Depending on the particular circumstances of the situation, the Control Room Operator under the Shift Manager's direction alerts the affected Unit's personnel and non-affected Unit's Control Room personnel and gives instructions regarding the event, using the public address system, the telephone or by an alternate method. Distinctive sounding signals are used to announce fire alarms or site emergencies.

      3) Depending on the particular circumstance of the situation, the Shift Manager has the discretion to activate all or a portion of the ERO. During normal working hours, the necessary personnel are available in the plant and are contacted by Public Address System, an electronic notification system or alternate methods. During off-hours, individuals can be contacted at their homes by telephone or electronic notification system. ERO member telephone numbers are in the

Emergency Telephone Directory available in the Control Rooms and Emergency Response Facilities.

4) Immediate Notification (within 15 minutes) of an Unusual Event is made by the Shift Manager or his designee to the New York State, Westchester, Rockland, Putnam and Orange County and Peekskill Warning Points, and the West Point Military Police Desk using the Radiological Emergency Communications System (RECS) phone (primary method) or backup methods: Local Government Radio (LGR) or commercial phone lines. The New York State Warning Point relays the information to the New York State Department of Health.

5) The Nuclear Regulatory Commission's Operations Center is notified using the Emergency Notification System (ENS) phone or commercial phone lines.

6) Individuals from Corporate Headquarters are notified by phone or other electronic notification system.

7) Closeout is accomplished by a verbal summary to offsite authorities followed by a written summary within 24 hours.

b. Alert

1) An Alert is declared by the Shift Manager (or Control Room Supervisor if the SM is unavailable) in the event an Alert threshold listed in Section D (Table D-1) is met or exceeded. If the EOF is Operational, this function would be performed by the ED.

2) Notification of site personnel is accomplished by the Control Room Operators initiating the site assembly alarm and/or via public address announcements. In addition, the affected unit's Control Room Operators also contact the unaffected unit's Control Room personnel.

3) In the case of a fire, additional notification in the form of a distinctive siren is also provided. The Shift Manager or designee would request, by phone, outside assistance from local support services as necessary.

4) The Shift Manager initiates the activation of the Emergency Operations Facility, Technical Support Center, Operations Support Center and Joint Information Center. During normal working hours, the necessary personnel are available in the plant and are contacted by the Public Address System or electronic notification system. During off-hours, individuals can be contacted at their homes by telephone or electronic notification system. ERO member telephone numbers are in the Emergency Telephone Directory available in the Control Rooms and Emergency Response Facilities.

5) Immediate Notification (within 15 minutes) of an Alert is made by the Shift Manager or his designee to the New York State, Westchester, Rockland, Putnam, Orange County, and Peekskill Warning Points and West Point Military Police Desk using the Radiological Emergency Communications System (RECS) phone (primary method) or backup methods: Local Government Radio (LGR) or commercial phone lines. The New York State Warning Point relays the information to the New York State Department of Health.

6) Nuclear Regulatory Commission's Operations Center is notified using the Emergency Notification System (ENS) or commercial phone lines.

7) Individuals from Corporate Headquarters are notified by phone or other electronic notification system.

8) If there is a radiological release involved with the event, the Shift Manager/ED or his designee will provide information on the release to the offsite authorities.

9) Close out is accomplished by the briefing of offsite authorities at the Emergency Operations Facility and by phone, followed by a written summary within eight hours.

c. Site Area Emergency

1) A Site Area Emergency is declared by the Shift Manager (or Control Room Supervisor if the SM is unavailable) in the event a Site Area Emergency threshold listed in Section D (Table D-1) is met or exceeded. If the EOF is Operational, this function would be performed by the ED.

2) Notification of site personnel is accomplished by the Control Room Operator initiating the site assembly alarm or use of the Public Address System. Accountability of personnel located within the Protected Area is performed. In addition, the affected unit's Control Room Operators also contact the unaffected unit's Control Room personnel.

3) The activation of emergency personnel to staff the Emergency Operations Facility, Technical Support Center, Operational Support Center and Joint Information Center is initiated by the Shift Manager. The minimum organization is described in Section B. During normal working hours, the necessary personnel are available in the plant and are contacted by the Public Address System, or electronic notification system. During off-hours, individuals can be contacted at their homes by telephone or electronic notification system. ERO member telephone numbers are in the Emergency Telephone Directory available in the Control Rooms and Emergency Response Facilities.

4) Individuals from Corporate Headquarters are notified by phone or other electronic notification system.

5) Immediate Notification (within 15 minutes) of a Site Area Emergency is made by the Shift Manager/ED or his designee to the New York State, Westchester, Rockland, Putnam and Orange County and Peekskill Warning Points, and the West Point Military Police Desk using the Radiological Emergency Communications System (RECS) phone (primary method) or backup methods:

Local Government Radio (LGR) or commercial phone lines. The New York State Warning Point relays the information to the New York State Department of Health.

6) Nuclear Regulatory Commission's Operations Center is notified using the Emergency Notification System (ENS) or commercial phone lines.

7) After arrival of ERO personnel, dedicated individuals would be assigned to provide plant status and meteorological and dose estimates for actual and projected releases.

8) If there is a radiological release involved with the event, the Shift Manager/ED or his designee shall provide information on the release to the offsite authorities.

9) Close out is accomplished by the briefing of offsite authorities at the Emergency Operations Facility and by phone, followed by a written summary within eight hours.

d. General Emergency

1) A General Emergency is declared by the Shift Manager (or Control Room Supervisor if the SM is unavailable) in the event a General Emergency threshold listed in Section D (Table D-1) is met or exceeded. If the EOF is Operational, this function would be performed by the ED.

2) The activation of the emergency organization, the notification of offsite authorities, Station Personnel, Corporate Headquarters is the same as described in Section E.1.c for a Site Area Emergency – with the addition of a Protective Action Recommendation being given.

2. Notification and Mobilization of Emergency Response Personnel:

At the Unusual Event classification, select portions of the Indian Point ERO are notified and can be activated at the discretion of the Shift Manager.

At the Alert, Site Area Emergency, or General Emergency classification level, notification and activation of all onsite ERO positions and related facilities is required. Based on the event, the ED would de-activate some positions or call in additional personnel as required.

Onsite personnel are notified of the declaration, escalation or termination of an emergency. An announcement is made from the Control Room over the plant public address system. In addition to the public address system, electronic notification system or alternate methods are used to notify the ERO.

NOTE: NUREG-0654 Criterion II.B.5 states that the "licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency". The time frames for rapid augmentation of a nuclear power plant staff in the event of an emergency are not rigid inviolate requirements but rather goals. It is Entergy's intent to expend its best efforts to meet the augmentation criteria goals regarding staffing Emergency Response Facilities with sufficiently skilled individuals capable of handling an emergency. Both the NRC and Entergy realize that due to diversity of normal residential patterns for the stations' staff, possible adverse weather conditions and road congestion, these time frames might be exceeded. These time frames may also be exceeded during a Security event.

ERO members who are away from the site when an event is declared are notified via an electronic notification system and/or phone calls. An automated notification system makes individual calls to members of the ERO. Once notified, ERO members respond to their assigned facilities immediately.

Mobilization of federal, state, and local response organizations is performed in accordance with their applicable emergency plan and procedures. At a minimum, mobilization of federal response organizations and activation of state and county EOCs is expected to occur at the declaration of an Alert.

The state and local authorities are responsible for the process of notification of their personnel and the general public.

3. Initial Notification:

An Initial Notification using Part I of the New York State Radiological Emergency Data Form shall be used to transmit information to appropriate State and local agencies within fifteen (15) minutes of any of the following:

- A classification is made;
- The classification changes;
- A change in radioactive release condition;
- A change in the downwind sector when a release is potential or occurring;
- A change is made in Protective Action Recommendations; and
- Additional information is available which may affect a change in the State or local protective action response.

The initial emergency message form includes information about:

a) authenticity, i.e. "This is NOT an Exercise (Drill)" or "This is an Exercise (Drill)";

b) identity of caller and receiver of call;

c) emergency classification;

d) emergency action level identification and whether a release is in progress;

e) wind direction, speed and stability class;

f) recommended protective measures if necessary;

g) the date and time of classification and notification.

In a General Emergency, the notification includes, at a minimum, a recommendation for sheltering or evacuation of the general public within the two (2) mile radius of Indian Point Energy Center and five (5) miles downwind, and implement the NY State KI plan. All remaining areas should monitor the Emergency Alert System (EAS).

4. Follow-up Messages:

The ED ensures communications are maintained with the offsite authorities through periodic follow-up messages. Follow-up message should be provided approximately every 30 minutes or on agreed upon intervals established with the offsite authorities. The follow-up messages include the following, as appropriate:

a. Location of incident, name and telephone number of caller;

b. Date and time of incident;

c. Class of Emergency. (Unusual Event, Alert, Site Area Emergency or General Emergency);

d. Type of actual or potential radiological release (airborne, waterborne, surface spill);

e. Whether or not [estimate of quantity of] radioactive material has been released or is being released;

f. Radiological release information, including estimates of the relative quantities and concentrations of noble gases, halogens, and particulates;

g. Meteorological conditions at appropriate levels (wind speed, direction to and from, stability);

h. Actual or projected dose rates at the site boundary, projected integrated dose at site boundary;

i. Projected dose rates and integrated dose at the Site Boundary and at 2, 5, and 10 miles;

j. Estimates of any surface contamination if applicable;

k. Recommended emergency actions, including protective measures;

l. Prognosis for worsening or improvement.

5. State and Local Information Dissemination:

State and local government organizations, in cooperation with Indian Point Energy Center personnel, have established a system for disseminating appropriate information to the public. The system includes notification through appropriate broadcast media, e.g. the Emergency Alert System (EAS).

6. Notification of the Public:

The State and local government organizations have the capability for providing an alert signal (sirens) to their population within fifteen (15) minutes following the decision to take a protective action.

The public Alert Notification System (ANS) is operated by local government agencies and maintained by Entergy. The design of the ANS includes backup power capability in accordance with NRC Order EA-05-190, dated January 31, 2006 (Section IV.II: A1 – A5 and B1 – B3). In cooperation with offsite agencies, Entergy personnel test the system periodically. System testing and preventive maintenance requirements include those specified in Section IV.II: A6 and C4 – C5 of the Order. Any system discrepancies are promptly repaired.

The public Alert Notification System (ANS) is composed of 172 sirens and the RECS phone for the US Military Academy. These are supplemented with individual alerting devices for residences and special facilities in EPZ areas where acoustic coverage is reduced.

The sirens are electronic. They are activated from each County EOC or Warning Point via simultaneous radio and TCP/IP signals. The county EOCs and Warning Points and IPEC have the same capability for siren activation.

The system design consists of 172 sirens with a distribution as follows:

- Westchester - 77
- Rockland - 56
- Orange - 23
- Putnam - 16

Periodic testing and maintenance of the ANS is performed in accordance with approved procedures. Periodic testing includes:

- Bi-weekly silent test – intended to check computer equipment, radio transmitter/repeater and siren receiver.
- Quarterly growl test – intended to test the siren sub-system from receiver antenna to siren (satisfies the requirement of the bi-weekly silent test).
- Annual activation test – intended to test the actuation and operation of the siren system (satisfies the requirements of the bi-weekly silent test) at full volume for a period of approximately 3 – 5 minutes.

Tone Alert Radios are distributed within the 10-mile EPZ to supplement siren alerting for residents and special facilities in EPZ areas where acoustic coverage is reduced or when requested. On an annual basis, guidance is provided on the use and testing of the tone alert radios.

Given that automated dialing is an accepted method that can be selected to provide primary alerting in accordance with FEMA-REP-10 guidance in consultation with New York State, Westchester, Rockland, Orange and Putnam Counties, the plan is to use "*automated dialing*" capability as the back-up method of alert and notification in the case of a siren failure.

7. Messages to the Public:

The State has developed draft messages for the Emergency Alert System (EAS) that are intended for the public. These draft messages are included as part of the State plan and contain instructions with regard to specific protective actions to be taken by occupants and visitors of affected areas.

Messages to the public are also provided via the Media. These messages are coordinated by licensee, Federal, State and local representatives at the Joint Information Center.

Part 2: PLANNING STANDARDS AND CRITERIA

Section F: Emergency Communications

This section describes the emergency communications equipment available to support the Indian Point Energy Center (IPEC) ERO. It outlines the available communications equipment to:

- Notify the Indian Point ERO
- Provide Initial Notification to governmental agencies;
- Communicate among the Indian Point Emergency Response Facilities and field teams;
- Communicate with the Nuclear Regulatory Commission (NRC) and other Federal, State, and local response agencies;
- Communicate with hospitals, ambulances, and other agencies providing offsite assistance to Indian Point Energy Center.

This section further outlines the program for insuring that the communications equipment is tested on a regular schedule, and that methods are in place to ensure rapid and reliable repair of any equipment found not operational.

1. Description of Primary Communications Systems

   Communications may be established by different means (radio, phone, public address system) within plant buildings, between the Site and local authorities and between the following groups: Control Room personnel, offsite support groups, Emergency Operations Facility personnel, Technical Support Center personnel, Operations Support Center personnel, Joint Information Center personnel, monitoring teams, security forces and Corporate Management.

   Public Address Systems

   The Public Address Systems are designed for paging within the Units (1, 2 and 3) from the Units' Control Rooms. Personnel paged have the ability to talk to the Control Room Operator via party line phones that are strategically located within the units. Plant personnel may initiate the communication to the Control Room from outlying party lines. These systems are used to call personnel and announce emergencies in the Indian Point Energy Center Protected Area(s).

   In the event the Public Address Systems are not operational, alternate methods of notification will be used.

   Telephone Exchanges

   Normal telephone communication service includes Private Branch (PBX), Commercial and/or Federal Telephone System (FTS) exchanges in the Control Rooms, Emergency Operations Facility (EOF), Technical Support Center (TSC), Operations Support Center (OSC), Joint Information Center (JIC), Incident Command Post (ICP), Corporate Headquarters, Alternate Emergency Operations Facility (AEOF) and Alternative Technical Support Center / Operational Support Center (Alternative TSC/OSC).

The Emergency Notification System (ENS) and the Health Physics Network (HPN) are dial telephone circuits in the Federal Telecommunication System used for the dissemination of operational conditions as well as the initial warning notification from the Site to the NRC. This system has extensions at the Control Rooms, Technical Support Center, Emergency Operations Facility and Alternate Emergency Operations Facility. Additional FTS2000 lines are available in the Emergency Operations Facility for NRC personnel responding to the Site.

Direct Line Phones

Radiological Emergency Communications System (RECS) and the Emergency Response Facility direct lines.

- The Radiological Emergency Communication System (RECS) with phones in the Control Rooms and the Emergency Operations Facility is the primary means for Indian Point Energy Center personnel to simultaneously notify the State and County Warning Points, Emergency Operations Centers, West Point and the City of Peekskill of an emergency. This system is staffed twenty-four hours per day in the Control Rooms, State, County, City of Peekskill and West Point Warning Points. IPEC Implementing Procedures and State and County Warning Point procedures detail the operation of this system and their respective organization responses.

Figure F-1.1 depicts RECS.

- Dedicated ringing phones connect the Technical Support Center/Operations Support Center with the Control Rooms and the Emergency Operations Facility/Alternate EOF.

- An Executive Hotline has been established between the EOF and the State and County Emergency Operations Centers that provides for a dedicated link between state and local officials and the ED once the EOF has taken command and control of Entergy's emergency response.

Radio Systems

A two-channel radio system is available for communication between the emergency facilities and individuals onsite. One channel is assigned for each unit to communicate with individuals performing tasks within the plant.

An additional radio channel is available for communications with the Field Monitoring Teams.

The Security Force connecting the Command Guard Houses with all guard posts uses a security radio system.

The Local Government Radio (LGR) is installed in the Control Rooms and Emergency Operations Facilities to be used as backup to the Radiological Emergency Communications System (RECS) phone. Figure F-1.2 depicts the LGR system.

Backup power for the IPEC Emergency Response Facilities radio systems is provided by either gas or diesel engine driven generators or batteries that will automatically supply AC power for the radio system if normal power is interrupted.

Electronic Notification System

A commercial electronic notification service is used for contacting personnel at the start of an emergency. When activated by station personnel, the notification service transmits a message via various communications pathways to all ERO personnel to report to their assigned ERO facilities.

Computer Systems

The Emergency Response Data System (ERDS) is a computer link from Indian Point Energy Center to the NRC Operations Center that displays key plant data. ERDS will be available at an Alert or higher classification.

Other computer systems have been established to display plant data and meteorological data in the onsite and offsite Emergency Response Facilities.

Additional Communications:

Indian Point Emergency Response Facilities are equipped to communicate with state and county Emergency Operations Centers once the ERO are in place.

a. The Nuclear Regulatory Commission is Indian Point's primary point of contact for communications with the Federal ERO. (See Figure F-1.3 for types of communications systems used.)
b. The communications described in this section provide for adequate communications between Indian Point Emergency Response Facilities. Implementing Procedures provide guidance for the ERO to establish and maintain proper communications throughout an event at Indian Point Energy Center.
c. Section E.2 describes the provisions for alerting and activating the ERO.
d. Procedures are in place for the ERO to continuously provide information to the NRC as requested.

Medical Communications:

Indian Point Energy Center establishes communications with the primary medical supplier, New York-Presbyterian/Hudson Valley Hospital, Peekskill/Cortlandt, and if needed the backup hospital, Phelps Memorial Hospital Center, Sleepy Hollow, via commercial telephone that is accessed by station personnel either via commercial onsite telephone or by an Indian Point Energy Center telephone system. The Unit 2 Control Room, by calling 911, obtains direct ambulance dispatch. The Dispatcher provides for a coordinated communications link to the ambulances responding to Indian Point Energy Center or transporting personnel from the Station.

Communications Drills and Testing:

Communications drills between Indian Point Energy Center and State and local governments are conducted in accordance with criteria contained in Section N.2. Also, Indian Point Energy Center personnel conduct monthly and quarterly surveillances to determine the working condition and availability of critical communications equipment. This surveillance includes a check of the units' operability and general condition. Deficiencies are identified and reported for prompt corrective action.

Figure F-1.1 Radiological Emergency Communications System

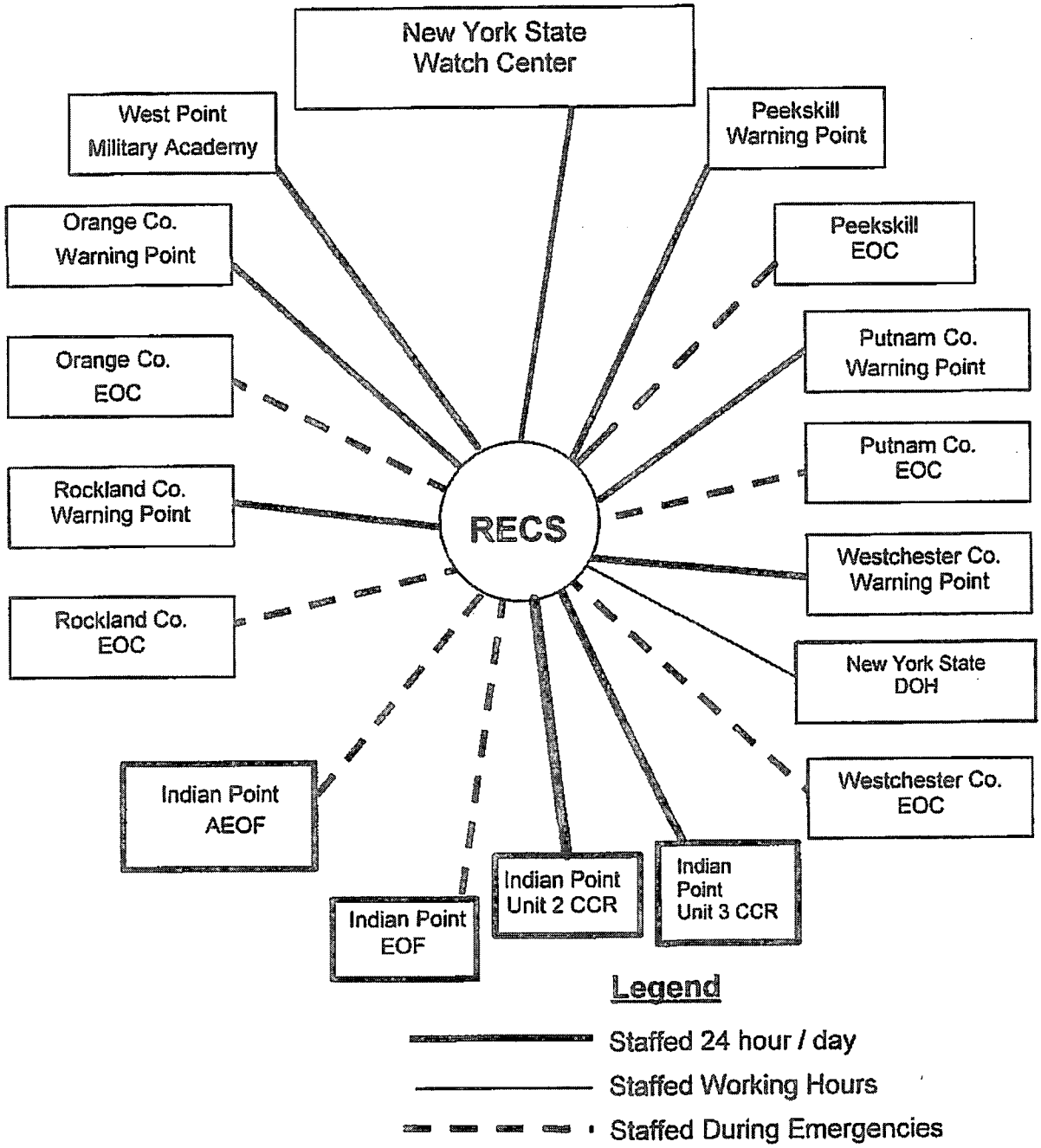


Figure F-1.2 Local Government Radio System

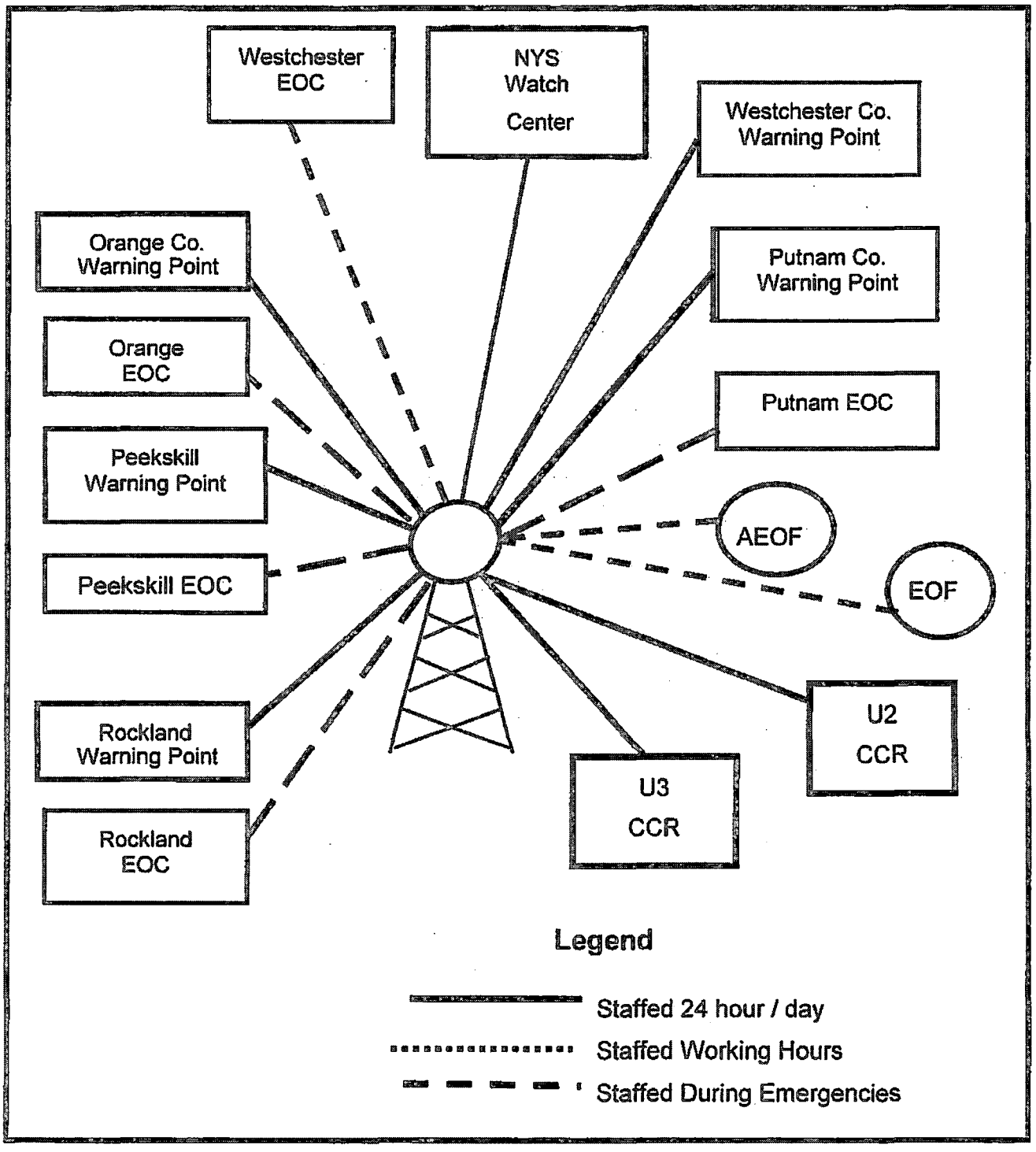
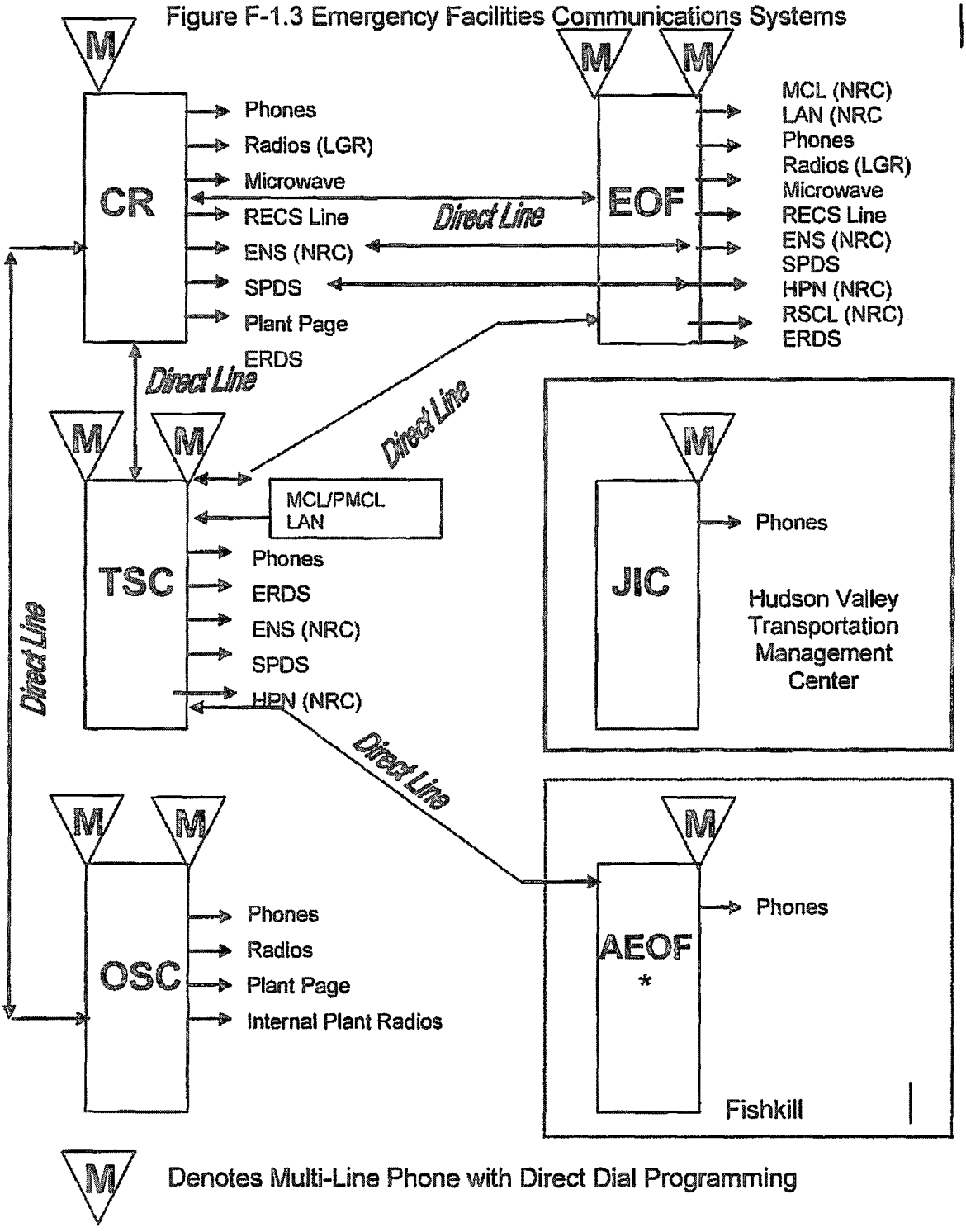


Figure F-1.3 Emergency Facilities Communications Systems



* When the AEOF is activated in the Fishkill Office, it has similar communications capabilities as the EOF.

Part 2: PLANNING STANDARDS AND CRITERIA

Section G: Public Education and Information

This section describes the Indian Point Energy Center public education and information program. It outlines the methods for distributing public information materials on an annual basis and describes how the public is informed in the event of an emergency.

1. Public Information Publication:

   Entergy, New York State and the counties of Westchester, Orange, Rockland and Putnam, are responsible for the periodic dissemination of educational information to the public within the 10-mile Emergency Planning Zone (EPZ).

   County-specific emergency planning educational booklets are provided to the public. The booklets contain public safety information about emergencies at Indian Point Energy Center and what the public may be asked to do in an emergency. The booklets are mailed to each household and business within the 10-mile EPZ.

   Updated booklets will be distributed annually.

   The booklet contents include, but are not limited to:

   a. Educational information on radiation;
   b. The types of events which require public notifications;
   c. State and county contacts for additional information;
   d. Instructions for the members of the public with special needs;
   e. Definitions of protective measures, written descriptions of emergency bus routes, locations of reception centers, steps to follow when sheltering or evacuating;

2. Public Education Materials:

   Additionally, an advertisement containing specific information is prepared and inserted into telephone books. Siren information stickers/posters are distributed to provide information for the transient population.

   These materials instruct the public to tune their radios or television to an Emergency Alert System station when they hear the Alert Notification System (sirens). The materials identify the local radio and television stations which the public should tune into to receive emergency-related information.

   Distribution of materials, updated as necessary, will be conducted annually.

3. Joint Information Center

   a. The Joint Information Center (JIC) is the official distribution point for the coordinated release of information from the four counties of Westchester, Rockland, Putnam and Orange, the State of New York, and Entergy's Indian Point Energy Center. The JIC is located outside the plume exposure emergency planning zone at the Hudson Valley Transportation Management Center, 200 Bradhurst Avenue in Hawthorne, NY.

      The JIC's primary functions are to:

      - Provide information to the media, through briefings or written statements on plant conditions and on emergency response actions being taken to protect the public.
      - Ensure that the public receives credible, accurate and timely information, and to identify and correct rumors or misinformation through coordinated public inquiry functions, as well as via coordinated media referral and media monitoring response operations.
      - Support further distribution of Emergency Alert System (EAS) emergency advisories to the public in the 10-mile Emergency Planning Zone (EPZ).

   b. The JIC can accommodate federal, state and local government representatives as well as news media representatives. State and local government representatives can all access the JIC through virtual connections such as video or teleconference capabilities.

   c. The JIC is equipped to support all activities including video conferencing computers, fax machines and copiers.

   d. JIC procedures allow Entergy JIC staff to disseminate information to the media at the Unusual Event classification or prior to activation of the JIC at higher classifications.

4. Coordination of Public Information

   a. The Entergy Company Spokesperson is the primary spokesperson for Entergy during an emergency. The Company Spokesperson has direct access to all necessary information.

   b. The JIC is staffed by federal and state emergency management agencies and Entergy personnel to assure timely exchange and coordination of information. County emergency management representatives participate in the JIC and exchange and coordinate information through video, teleconferencing and web link. Representatives coordinate information prior to distributing news releases and prior to news briefings. Press releases are reviewed by appropriate law enforcement agencies during hostile action events.

c. Call Centers respond to public inquiries. Entergy, NYS, and each county respond to news media calls. It also monitors media reports through Internet websites. Rumors or misinformation are identified during an emergency by phone and media monitoring teams. Reports of misinformation or rumors are forwarded to the JIC staff for appropriate response.

5. Media Orientation

Entergy in cooperation with NYS will annually acquaint news media personnel with the emergency plans, information concerning radiation and points of contact for release of public information in an emergency.

NYS typically issues a media advisory annually informing the media of Licensee, State, and County Websites that provide information on Emergency Planning, Radiation, and Indian Point Energy Center.

Part 2: PLANNING STANDARDS AND CRITERIA

Section H: Emergency Facilities and Equipment

This section describes the emergency facilities and equipment used by the Indian Point Emergency Response Organizations. It outlines the facilities and equipment requirements that aid in the timely and accurate response by the Indian Point Emergency Response Organizations. It also describes the surveillance programs used to monitor and insure that these facilities and equipment are maintained in a high degree of constant readiness.

The emergency response activities of the Plan are distributed among the functions of the following Emergency Response Facilities (ERF):

- Control Rooms (Unit 2 & Unit 3)
- Technical Support Center (joint facility)
- Operations Support Center (joint facility)
- Emergency Operations Facility (joint facility)
- Alternate Emergency Operating Facility (joint facility)
- Joint Information Center (joint facility)
- Alternative Technical Support Center / Operations Support Center (joint facility)

Each facility has procedures, staff, accommodations, equipment, services and supplies for implementing its function.

1. In-Plant Emergency Response Facilities

   Control Rooms (CR)

   Each unit's control room contains the necessary instrumentation for operating the plant under normal and accident conditions. Control Room personnel make the initial declaration and classification of an emergency and perform activities of other Emergency Response Facilities until those facilities are operational. Manipulations of the reactor or the plant to mitigate the consequences of an accident and restore safe conditions, however, remain as the primary function of the CR.

   Once the entire ERO is operational, if required, additional positions are assigned to the CR. These individuals assure plant parameter data is available to the TSC/OSC and provide other emergency communications as necessary.

   Overall management of the emergency response lies with the Shift Manager in the CR until it is accepted by either another qualified ED in the CR, (Plant Operations Manager) or the ED located in the EOF. Meteorological, plant parameter, offsite radiation monitor, and survey data are available for accident assessment, emergency classification and protective action recommendations. Telephone and radio services are available to alert and notify government authorities of emergencies and recommend protective action.

Technical Support Center (TSC)

The Indian Point Energy Center TSC is in the Unit 1 Superheater Building, 53' elevation across the hall from the Unit 2 CR.

In the event that the TSC becomes uninhabitable, Emergency Planning Implementing Procedures provide details on how to relocate TSC personnel.

The primary functions of the TSC include providing:

- Plant management and technical support to the reactor operating personnel in the Control Room (CR) and
- Information on plant events and conditions, including plant parameter data, to the ED in the EOF.

The TSC is operational with minimum staff within 60 minutes after a declaration of an Alert, SAE, or GE. Activation of the ERO at an NUE is discretionary. In declaring the facility operational the manager should consider that the staff is appropriate to the need, that equipment is set up and that the facility is available to assume/perform the emergency functions assigned to the TSC.

The TSC Manager directs and coordinates activities in the TSC. Plant parameter data is available for accident assessment including core damage assessment. This data can be forwarded to the EOF or AEOF. Telephone service between locations on and off the site is also available.

Included in the TSC are the Computer Room, and NRC Conference/workspace. The Ventilation System assures that the General Design Criterion 19 (GDC) exposure limits of 5 Rem whole body and 30 Rem thyroid, during the first 30 days of a Design Basis Accident (DBA) can be met.

Operations Support Center (OSC):

The Indian Point Energy Center, OSC is located in the Unit 1 Superheater Building, 53' elevation adjacent to the TSC.

The OSC is where survey, operations and repair teams are dispatched into areas of the plant and is the staging area for individuals who may be assigned to first aid, search, rescue, survey, repair and corrective action teams.

The OSC Manager is responsible for managing the activities in the OSC including:

- Ongoing accountability of anyone dispatched from the OSC. The Control Room Supervisor or the Security Shift Supervisor tracks individuals who are assigned to the Control Room Watch or the Security Force respectively;
- Radiological exposure control for the individuals within the OSC and TSC and teams dispatched to the field.
- Mobilizing of individuals on the emergency roster needed to fill the positions in the OSC and other support personnel such as materials and warehouse personnel.

The OSC is operational with minimum staff within 60 minutes after a declaration of an Alert, SAE or GE. Activation of the ERO at an NUE is discretionary. In declaring the facility operational the manager should consider that the staff is appropriate to the need, that the equipment is set up and that the facility is available to assume/perform the emergency functions assigned to the OSC.

Equipment and supplies for the OSC include protective clothing, dosimetry, sampling and survey equipment to be used by the OSC teams.

Tools and parts available on site for normal plant maintenance are also available for damage control operations during emergencies.

Radiological exposure controls for the OSC include monitoring conditions and relocation if necessary.

In the event the OSC becomes uninhabitable, Plan Implementing Procedures provide details on how to relocate OSC personnel.

2. Emergency Operations Facilities:

The EOF is located at the Indian Point Energy Center, just inside the Main Facility Gate on Broadway. Functions performed at the EOF include:

- Overall management of the Indian Point Energy Center emergency response;
- Accident assessment including environment samples, surveys and dose calculations;
- Alert and notification of Federal, State and local government authorities of plant events, conditions, emergency action levels, emergency classifications and dose projections;
- Protective action recommendations to State and Local government authorities for the population around the EPZ;
- Coordination with Federal, New York State and local government;
- Radiological exposure control for the individuals on-site outside of the Protected Area.

The EOF is operational with minimum staff within 60 minutes of a declaration of an Alert, SAE or GE. Activation of the ERO at a NUE is discretionary. In declaring the facility operational, the manager should consider that the staff is appropriate to the need, that the equipment is set up and that the facility is available to assume/perform the emergency functions assigned to the EOF. Accommodations are available for Federal, State and local government representatives.

The ED in the EOF is responsible for the overall management of the response. Meteorological, plant parameter, offsite radiation monitor, environmental sample and survey data are available for accident assessment, emergency classification and protective action recommendations. Telephone and radio services are available to

alert and notify government authorities of emergencies and recommend protective action.

There are two levels in the EOF facility. The Emergency Control Center (ECC), Dose Assessment Area, NRC Room, Electrical Equipment Room and Communications Equipment Room are on the lower level and the State, County and Administrative Support areas are on the upper level.

Alternate Emergency Operating Facilities (AEOF)

There is an alternate location for the EOF outside the plume exposure Emergency Planning Zone (EPZ). AEOF and EOF functions are similar.

The Alternate Emergency Operations Facility is located on the 2nd floor of 60 Merritt Boulevard, Fishkill, NY. Procedures, staff, accommodations, equipment, services and supplies for the AEOF are similar to those for the EOF including the capability to perform offsite notifications.

Entergy Regional Offices

Entergy provides support from the Corporate Headquarters and other Entergy sites. This office provides a common point of communication and coordination for the ED and the Indian Point ERO with the resources available through other corporate organizations.

3. Joint Information Center (JIC)

The JIC is located outside the plume exposure emergency planning zone at the Hudson Valley Transportation Management Center, 200 Bradhurst Avenue, Hawthorne, NY and provides a place for;

- Point of contact between the Entergy corporate spokesperson and the news media; and
- Coordination of public information released to the news media and the public by Entergy, State and Local government including alerts, notifications and protective action recommendations.

The JIC has accommodations for Federal, State and Local government representatives as well as representatives of the news media.

The JIC Manager manages Entergy activities at the JIC. The JIC has equipment to support the activities including video conferencing, telephones, facsimile and photocopiers. The JIC will be operational with minimum staff within 2 hours after a declaration of an Alert, SAE or GE. In declaring the facility operational the manager should consider that the staff is appropriate to the need, that equipment is set up and that the facility is available to assume/perform the emergency functions assigned to the JIC.

4. Alternative TSC/OSC

The Alternative TSC/OSC has communication capabilities for contacting the Control Room, plant security, and the EOF, is available to serve as a staging area for augmented emergency response staff if the site is under threat of or experiencing hostile action. The Alternative TSC/OSC also has the capability for engineering assessment activities.

5. Offsite Emergency Operations Centers (EOC)

State and Local Agencies have established Emergency Operations Centers to direct their emergency response. The offsite EOCs are located as follows:

Orange County	Orange County Emergency Services Center, Goshen, NY
Putnam County	Putnam County Training and Operations Center, Carmel, NY
Rockland County	Fire Training Center, Pomona, NY
Westchester County	Transportation Management Center, Hawthorne, NY
NY State	Public Safety Building State Campus Building #22, Albany, NY

6. Activation and Staffing of Emergency Response Facilities

Entergy has in place plans and procedures to ensure the timely activation of its emergency response facilities. Facilities are activated then declared operational when facility managers determine they can perform required functions based on minimum staff and emergency conditions. The full staffing of the emergency facilities is described in Section B of this plan. Timely mobilization and activation of the ERO is described in Section E.1.

If the site is under threat of or experiencing hostile action that would prevent emergency responders from reaching the site, EOF Staff would be sent to activate the Alternate EOF. TSC, OSC and CR Staffs will be notified to report to a designated alternate facility. TSC/OSC/CR staffs will provide any possible assistance from this offsite staging area until such time as site access is restored.

7. Emergency Onsite Monitoring Systems

In addition to the extensive normal plant systems which continually monitor plant systems, the following systems are used for emergency assessment:

a. Seismic Monitoring Equipment

The seismic monitoring equipment at the Indian Point Energy Center Site is located in the Unit 3 Containment Building. The Unit 3 Control Room Operator transmits information from this equipment to the Unit 2 Control Room. The monitoring system consists of three peak shock recorders in a tri-axial mount at EL-46'-0" on the base mat; two tri-axial strong motion accelerographs, one at EL-46'-0" on the base mat and one on the Containment Structure Wall at EL-100'-0" directly above the lower

unit and three peak recording accelerographs, one each on a steam generator, a reactor coolant pump and the pressurizer.

The peak shock recorders readout in the Unit 3 Control Room on a peak shock annunciator when acceleration limits are exceeded. Both strong motion accelerographs record on digital tape recorders also located in the Control Room. The accelerographs on the base mat are wired to an alarm panel in the Unit 3 Control Room which produces an audible and a visual signal at an earthquake acceleration greater than 0.01g. If necessary, the magnetic clips from the peak recording accelerographs must be retrieved from inside containment to be further evaluated.

b. Radiological Monitors

A Radiological Monitoring System, consisting of fixed process (air, liquid or gas) monitors and area radiation monitors, are installed throughout each Unit with remote readouts and alarm indications in the Control Rooms. Key fixed radiation-monitoring equipment is identified in the U2 and U3 FSAR's.

In-plant Iodine Instrumentation

Measurement and analysis of airborne iodine concentrations within the station can be performed onsite using equipment located in areas expected to have post accident accessibility. Portable equipment to collect local samples is also available onsite. Procedures provide direction and guidance for sample collection and analysis.

Post-accident Sampling

Plant design includes the capability to sample the reactor coolant system, the discharge of the recirculation and residual heat removal pumps, and the post accident containment atmosphere.

Facilities for the radiation protection and chemistry groups include laboratory and calibration rooms for both conventional and radio chemical analyses.

Portable Survey Instruments

Counting equipment and supplies are available in emergency lockers. Administrative procedures describe type, locations and the amount of equipment available to the ERO.

c. Process Instrumentation

Vital parameters (e.g. pressure, flow, temperature, fluid level) are monitored and abnormal conditions immediately brought to the attention of the watch force with either local indication or remote indication in the Control Rooms.

Process instrumentation inside containment provides required operating and assessment information after a loss of coolant accident or a steam-line break. This instrumentation includes:

- Pressurizer pressure channels
- Pressurizer level channels

- High-head flow channels
- Accumulator pressure channels
- Recirculation spray flow channels
- Recirculation sump level channels
- Containment sump level channels
- Residual heat loop flow channels

d. Instrumentation for Detecting Inadequate Core Cooling

Instrumentation for detecting inadequate core cooling includes:

- Reactor coolant saturation meter
- Hot leg wide range temperature
- Cold leg wide range temperature
- Wide range reactor coolant pressure
- Pressurizer level
- Reactor vessel level indication system (RVLIS)
- Core exit thermal couples

The first indication of mass loss from the Reactor Coolant System (RCS) may be a decreasing pressurizer level. Saturation or the degree of subcooling can be determined from the saturation meter or with primary system pressure and temperature from the steam table in the Control Room. Cold and/or hot leg wide range temperatures that are higher than the saturation temperature indicate degradation of core cooling.

e. Fire Detection

Heat and smoke detectors are located throughout the plant with alarms annunciated in the Control Rooms. A detailed description of the fire detection equipment is in the Fire Protection Program documents.

8. Offsite Emergency Data Acquisition

a. Alternate sources for geophysical data

If meteorological data is unavailable from the station's tower, information can be obtained from the following sources:

- Several internet sites provide meteorological data and may be accessed from Emergency Response Facilities
- National Weather Service (NWS) hourly data from area reporting stations including wind speed, wind direction, cloud cover, precipitation, temperature, dew point and atmospheric pressure.

- Atlantic City, New Jersey and Albany, New York NWS stations. These sources can also be used for flood and drought conditions for the Hudson River.

b. Government agencies and other technical data resources are available to the Indian Point Energy Center staff regarding seismic monitoring of the Indian Point Energy Center vicinity.

c. Backup radiological monitoring equipment and assistance can be obtained from other utilities through INPO or the Department of Energy's Brookhaven Area Office. Letters of agreement for these services are referenced in Appendix 2 of this plan.

d. Environmental sample preparation and counting are available through the use of an offsite laboratory. The offsite laboratory contract is available through the Indian Point Energy Center contracts department.

9. Facilities and Equipment for Offsite Monitoring

a. Survey Vehicles

Indian Point Energy Center has survey vehicles, equipped with two-way radios, GPS units and cell phones. Offsite Monitoring Kits used in these vehicles include air samplers, sample counters, portable survey meters (including low-level radioiodine detection equipment with a minimum sensitivity of 1×10^{-7} µCi/cc), and personnel dosimeters are available for offsite monitoring. A more detailed list of equipment is available in the Plan Implementing Procedures.

During an emergency, the survey vehicles are sent to pre-selected locations within the EPZ. Laboratory facilities for personnel whole body counting and for environmental sample preparation and counting exist at the site.

b. Radiological Environmental Monitoring Program

Indian Point Radiological Environmental Monitoring Program includes routine direct gamma measurements, particulate and radioiodine air sampling, water sampling, and seasonal aquatic and land vegetation sampling at various locations. The Indian Point Radiological Environmental Monitoring Program is described in each unit's Offsite Dose Calculation Manual (ODCM).

Backup facilities for the environmental sample preparation and counting are available by a contract with an offsite laboratory.

c. Fixed Field Measurement Sites

Pressurized ionization chambers, one in each of the 16 sectors are located at various distances between the site boundary and 2 miles. The radiation data is collected by a computer system at the Indian Point Energy Center that allows access to this information through the Meteorological, Radiological and Plant Data Acquisition System (MRPDAS). The information from these systems is available at all IPEC facilities through the Entergy computer network. This information is also available to offsite Emergency Operation Centers via MRPDAS through a secure internet portal to the Entergy computer network. Data from these fixed field measurement sites may be used to verify the travel path of a radiological release and to estimate whole body exposure rates offsite.

10. Meteorological Monitoring

The meteorological system at the Indian Point Energy Center provides real-time meteorological parameters as specified in Enclosure 1 to Appendix 2 of NUREG-0654 (January 1980) and USNRC Regulatory Guide 1.23 Revision 1. The three basic functions outlined in Annex 1 to Appendix 2 of NUREG-0654-Rev. 1 have been implemented.

The meteorological system at Indian Point Energy Center consists of three meteorological towers. The 122 meter primary meteorological tower has instrumentation consisting of wind speed, wind direction and temperature at multiple levels. The vertical temperature gradient is then used to determine atmospheric stability. A backup diesel generator equipped with an automatic power transfer switch is available in the event that the normal AC feed is lost.

Backup towers are also available onsite. These towers provide a single 10-meter elevation for wind speed and wind direction instrumentation only. Determination of atmospheric stability is determined from the standard deviation of the horizontal wind fluctuation (sigma-theta) over a 15-minute period.

Real-time wind speed and wind direction data are continuously monitored and recorded as 15-minute averages, with the data available through the Entergy computer network (MRPDAS). All of the data outputs are in the format specified in Enclosure 1 and Appendix 2 of NUREG-0654 (January 1980). Real-time meteorological information can also be obtained from the National Weather Service stations and other offsite meteorological facilities identified in Section H.8.

Real-time atmospheric transport and diffusion calculations are made using a computer system and peripherals.

11. Facility and Equipment Readiness

Emergency facilities and equipment are inspected and inventoried in accordance with departmental administrative procedures. The inspection includes an operational check of instruments and equipment. Equipment, supplies and parts that have a shelf life are identified, checked and replaced as necessary. Sufficient reserves of instruments/equipment are maintained to replace those that are removed from emergency kits or lockers for calibration or repair.

Survey instruments and counters have been placed on a rotating calibration schedule. Other equipment requiring calibration will be calibrated as recommended by the manufacturer. Normally, equipment requiring calibration will be calibrated at the Station or by another qualified calibration service and will be immediately available in the event of an emergency.

Dedicated communications equipment between Federal, State and local government agencies within the plume exposure pathway EPZ are checked periodically in accordance with Section N.2.

The results of tests, inventories, and inspections are submitted to the Emergency Planning Manager or designee for review. The Emergency Planning Manager or a designee is responsible for the evaluation of these results and assignment of corrective actions for deficiencies identified, if any.

Emergency Preparedness staffs will be informed of select system inoperability determinations resulting from any tests, inventories or inspections conducted on the systems, as the availability of these systems can have significant impact on the Emergency Plan.

12. Identification of Emergency Equipment and Supplies

Table H.1, Typical Emergency Equipment lists equipment that is typically provided for emergency response. Emergency Preparedness administrative procedures provide for details of specific type, location, content and are used to inventory emergency supplies.

13. Collection and Analysis of Field Monitoring Data

The Indian Point Energy Center is equipped to collect Offsite Monitoring data and samples. Sampling and analysis equipment is available to determine the activity of samples taken outside the Protected Area. Instrumentation and equipment utilized for sample activity determination is routinely calibrated to ensure timely availability. Emergency response personnel are in place to analyze samples and data to make decisions on protective action recommendations. Samples can be packaged and shipped to offsite laboratories for further analysis.

Table H-1: Typical Emergency Equipment

Emergency equipment and supplies are stored at various locations throughout the site for immediate use by emergency forces. The following is a listing of the types of equipment and supplies stored at various locations.

Protective Equipment:	-	Anti-Contamination Clothing
	-	Respirators
	-	Self-Contained Breathing Apparatus
	-	Potassium Iodide (KI)
	-	Breathing Air Stations
Radiological Monitoring	-	Air Samplers
Equipment:	-	Ionization Chamber Survey Instruments
	-	G-M Friskers
	-	Iodine Counters
	-	Dosimetry
	-	Maps and Overlays
Communication Equipment:	-	Telephones and outside lines
	-	Various dedicated lines specific for the purpose of warning: RECS, ENS/HPN, Plant Alarms and Public Address System
	-	Various direct lines
	-	Radios IPEC onsite, offsite channels, and Local Government)
	-	Fax machines
	-	Log Books/EP-Forms
Emergency Supplies:	-	First Aid Kits
	-	Stretchers / Blankets
	-	Resuscitators
	-	Backboards / Splints
	-	Cervical collars

Part 2: PLANNING STANDARDS AND CRITERIA

Section I: Accident Assessment

To effectively coordinate and direct all facets of the response to an emergency situation at Indian Point Energy Center, diligent accident assessment efforts are required throughout the emergency. All four emergency classifications have similar assessment methods; however, each classification requires a greater magnitude of assessment effort dependent upon the plant symptoms and/or initiating event(s).

In the case of a Notification of Unusual Event, the assessment and coordination of efforts are handled through the Control Room, with additional support as identified by the Shift Manager. During Alert, Site Area and General Emergencies the Technical Support Center, Operations Support Center, Joint Information Center, and the Emergency Operations Facility are activated. Technical Support Center personnel assist the watch personnel in the assessment of the accident and recommend appropriate steps to mitigate the accident. The Operations Support Center assists with in field inspections of plant equipment. The Emergency Operations Facility personnel continue the evaluation of offsite consequences started by the Shift Manager. The Joint Information Center provides interface with the public. The Emergency Operations Facility, when activated, maintains contact with the Control Room and contact with the offsite agencies, and then provides an overview of the assessment actions taken at various classifications levels as follows:

Notification of Unusual Event

The existence of conditions which would be classified under this heading is brought to the attention of Control Room Operators by (a) meteorological reports, (b) indications and alarms in the Control Room monitoring plant parameters, (c) indications from fire, seismic or security detection systems, or (d) observations by plant personnel.

Depending upon the particular circumstances of the event, the Shift Manager takes one or more of the following actions to assess the severity of the situation: request clarification and periodic update of meteorological information received from offsite source; monitor Control Room indications more closely; request the plant security force to investigate the matter further and report their findings; dispatch member(s) of the watch force to personally inspect areas of the plant; request assistance from the plant operations staff and/or Entergy's Engineering Departments in evaluating data; and make personnel observations (e.g. assessing the intensity and extent of fire). With regard to accidental releases of radioactivity within plant buildings, the Shift Manager would evaluate the alarm received with respect to other radiation monitors and process instrumentation readouts in the Control Room. Radiation Protection personnel could be sent into the affected plant area to make observations and evaluate radiation levels.

Alert

For emergency situations that are classified as Alerts, the Shift Manager/ED evaluates information available in the Control Room regarding radiation monitor readings, nuclear and process instrumentation readings, containment integrity and status of safeguards equipment.

The Shift Manager or Plant Operations Manager, acting as the ED at the start of the emergency, and the on call ED after taking over control at the Emergency Operations Facility, will continually direct assessment of the relative condition of the three fission product barriers and radiological conditions onsite and offsite.

During Alerts with radiological concerns, radiological assessment actions are initiated as described under the Site Area Emergency and General Emergency part of this section.

Site Area Emergency and General Emergency

For emergency situations that are classified as Site Area Emergencies or General Emergencies, the Shift Manager/ED evaluates information available in the Control Room regarding radiation monitor readings, nuclear and process instrumentation readings, containment integrity and the status of safeguards equipment.

An immediate assessment of the projected exposure to the offsite populace is made by using Dose Assessment Computer Programs or by using an Implementing Procedure which includes determining a source term, release rate, radioactive airborne concentrations in the environment and projected exposure to the whole body and thyroid of individuals exposed to the plume. The specifics of these are as follows:

The source term is determined from the R-25 and R-26 accident monitor instruments, indicating radioactivity in the containment building released from the reactor core.

- The release rate is determined from the Plant Vent Monitor, Air Ejector Monitor or the Main Steam Line Monitors. Should the plant vent monitors read off-scale or be inoperable, contact field measurements are taken on the plant vent and a procedure is available to convert the mR/hr reading to an equivalent radioactive concentration for noble gases and radioiodine.
- The radioactive airborne concentrations in the environment are determined first by calculation and then by actual measurement. The calculations are done by computer or by hand, utilizing the Implementing Procedures:
    - The calculation is performed using an equation that utilizes the release rate, dilution factor and wind speed. The dilution factor is obtained from a table, in the computer program or Implementing Procedure, corresponding to the current meteorological data.
    - Measurements are made by offsite monitoring teams who go to selected points and perform field surveys and air sampling. The air samples are counted and the activity calculated.

- The projected thyroid exposures are obtained from calculations that convert radioactive concentrations to mRem/hour and measurements taken in the field. Whole body exposures are as indicated by the field surveys.

This assessment is updated based on air sampling and field surveys performed by offsite monitoring teams using radio and cell phone equipped vehicles under the direction of the ED. The area within a 10-mile EPZ is divided into 16 equal 22½° sectors. In each sector, Dosimetry of Legal Record (DLR) has been installed at strategic locations.

A number of strategically located continuous air sampling sites may also be used to evaluate the exposure for the population at large.

The ED transmits updated assessment information to the New York State Office of Emergency Management and to the Westchester, Rockland, Putnam, and Orange County Emergency Management Offices.

Radioactive contamination assessment is performed after a release is terminated. The ongoing Indian Point Radiological Environmental Monitoring Program described in the Offsite Dose Calculation Manual (ODCM) is utilized to determine the extent of contamination.

Radiological assessment personnel in accordance with an Implementing Procedure calculate total population dose. This calculation and others utilize established demographic information in combination with the DLR, bioassays, and projected dose distributions to obtain total population exposure within the 10-mile EPZ.

1. Plant Parameters and Corresponding Emergency Classification

   a. Plant system and effluent parameter values are utilized in the determination of accident severity and subsequent emergency classification. Environmental and meteorological events are also determining factors in emergency classification.

   b. An emergency condition can be the result of just one parameter or condition change, or the combination of several. The specific symptoms, parameter values or events for each level of emergency classification are detailed in the Implementing Procedures.

   c. In order to adequately assess the emergency condition, each emergency facility has the necessary equipment and instrumentation installed to make available essential plant information on a continuous basis. The types of instrumentation and equipment capabilities available for each emergency facility are described in Section H of the Plan.

2. Onsite Accident Assessment Capabilities

In addition to normal plant monitoring systems and procedures, the following systems are provided for accident assessment:

a. Sampling System

Plant design includes the capability to sample the reactor coolant system, the discharge of the recirculation and residual heat removal pumps, and the containment atmosphere.

Facilities for the radiation protection and chemistry groups include laboratory and calibration rooms for both conventional and radio chemical analyses.

b. Area Radiation & Process Radiation Monitors

Indian Point Energy Center has Area Radiation Monitors (ARM) for the direct measurement of inplant exposure rates and Process Radiation Monitors (PRM) for the measurement of noble gas and radioactive iodine concentrations in plant effluents. The ARM readings allow inplant exposure rate determinations to be made remotely without requiring local hand-held meter surveys. This information may be used, initially, to aid in the determination of plant area accessibility. The Process Radiation Monitors provide an immediate indication of a radiological release of effluents. The Process Radiation Monitor readings can be used as an input into the dose assessment computer programs that display the projected whole body and child thyroid exposures to the populace in the plume exposure pathway.

c. Containment Radiation Monitors and Hydrogen Monitor

Containment Radiation Monitors and/or Hydrogen Monitors along with Core Exit Thermocouples may provide an early indication of core damage. These monitor readings are utilized as a method for core damage determination. This is accomplished through use of established procedures based on Westinghouse Owners Group guidance. The core damage estimate obtained from the procedures may also be used to confirm the core damage results obtained through isotopic analysis. These monitors also allow for the evaluation of a potential radiological release.

3. Release Source Term Determination

a. The potential for release of radioactive material and the magnitude of the release can be assessed through use of the Containment Radiation Monitors and Process Monitors. The Containment Monitoring System readings can be used to estimate the percentage of core damage and establish the total number of curies available for release.

b. If a liquid or gaseous release occurs, the routine or high range process monitors will indicate the release rate. If the release is from an unmonitored point, technicians will take grab samples to be analyzed.

Radiation monitors are located as described in the U2 & U3 FSARs. The readings obtained from these monitors are converted to actual release rates through the use of computer programs.

4. Effluent Monitor Data and Dose Assessment:

The correlation between effluent monitor data and onsite and offsite exposure rates is accomplished through use of the dose assessment computer codes. These programs allow for the direct input of effluent monitor and meteorological data. The computer will generate release rates, projected dose rates and doses to the whole body and thyroid as well as downwind noble gas and particulate concentrations via the plume exposure pathway. The computer software also has the capability of performing multiple accident dose assessment involving simultaneous releases from one or both of the Indian Point Energy Center units. Dose projections may also be performed without the use of a computer through a series of hand calculations. Indian Point Energy Center uses ground releases to conduct dose assessment.

Entergy has procured and installed computer based systems, which are capable of:

a. Calculating the dispersion path of radioactive material if released to the atmosphere by the plant;

b. Obtaining meteorological information from a primary and backup meteorological tower, thus providing assurance that basic meteorological information is available during and immediately following on accidental airborne radioactivity release;

c. Calculating the radiological consequences of accidental radioactive releases to the atmosphere;

d. Providing simultaneous real-time meteorological data for estimation of transport and diffusion estimates of a release in the vicinity of the site. This information is available to the licensee, offsite emergency response organizations and the NRC Staff, via telephone computer access;

e. Obtaining additional radiological and meteorological inputs that assist in defining the site generated dispersion path calculations.

5. Meteorological Information:

Meteorological data is available from the station meteorological tower. The data available includes wind speed, wind direction, stability class (Pasquill). This data is utilized by the licensee, locals, State and other Federal Agencies to provide near real-time predictions of the atmospheric effluent transport and diffusion. Section H.10 provides more details on the Meteorological Monitoring System.

6. Unmonitored Release:

During an actual release via an unmonitored flow path or in situations in which effluent monitors are either off scale or inoperative, dose projections can be made through the use of actual sample data and/or field monitor team readings.

7. Offsite Monitoring:

In the event of an airborne or liquid release, the station maintains the resources and capabilities to take air, soil, water, and vegetation samples as well as to directly measure gamma dose rates. Samples are taken at locations specified by the Radiological Assessment Coordinator. Environmental measurements are utilized as an aid in the determination of protective and recovery actions for the general public.

A Reuter Stokes Radiation Monitoring System consisting of a network of monitors is installed in each of the 16 sectors around the Indian Point Energy Center Site at a distance of 0.5 to 2.5 miles. These devices will continuously telemeter, via radio, radiation level readings to a computer system, which can be accessed in the EOF, AEOF, IPEC Central Control Rooms and local and State EOCs.

Dosimetry of Legal Record (DLR) - DLR's are deployed in three (3) rings at approximately 2, 5 and 10 miles from the site. DLR's are sensitive to Gamma radiation and are gathered and read periodically. There are approximately 57 DLR's distributed within the 10 mile Emergency Planning Zone for Indian Point Energy Center.

Air Samplers are deployed at a number of the sampling sites. They are constantly in operation and pass ambient air through a series of filters that are capable of trapping radioactive iodine and other radioisotopes in the air. The filters are periodically removed and analyzed by Entergy personnel.

8. Offsite Monitoring Teams:

Offsite Monitoring Teams are available at an Alert or higher classification to make rapid assessments of the actual or potential magnitude and location of any radiological hazards from the liquid or gaseous release pathways. These teams are composed of two individuals qualified to perform radiological monitoring.

Monitoring teams establish and maintain direct radio or phone communications with the Emergency Operations Facility (EOF). An Offsite Team Coordinator in the EOF controls the teams. The teams locate and monitor the radioactive plume while taking air samples as directed.

Offsite teams utilize portable equipment during an emergency to gather data from any of the sixty-one predesignated emergency sampling locations around the Indian Point Energy Center Site. Large-scale maps showing the locations are in the Control Room and Emergency Operations Facility (EOF) or AEOF, for use by the ED. Readings taken by these teams are relayed back to the site via radio or phone communications.

Monitoring Team Kits containing necessities including the following radiological equipment are maintained in a ready state and would be utilized by the teams:

a. Radiation field survey instruments used to perform beta and gamma radiation field surveys.

b. Air Sampler which is basically a blower with a filter holder in the inlet, utilized to take samples of ambient air and pass the air through a fiberglass and an activated charcoal or silver zeolite filter. The filters remove and absorb radioisotopes from the air.

c. Sample counter that is a device used to measure the radioactivity of filters used in the air sampler.

d. Equipment for personnel protection such as shoe covers and gloves for use in radiation environments.

e. Support equipment and supplies.

Survey data from monitoring teams is used to define affected areas, verify or modify dose projections and protective action recommendations, and assess the extent and significance of a release.

9. Iodine Monitoring:

Offsite Monitoring Teams collect air samples while in the plume exposure pathway. The teams carry procedures and equipment for sampling and measuring radioiodine concentrations in air as low as 1.0E-7 micro curies per cubic centimeter in the presence of noble gases.

10. Dose Estimates:

Specific Implementing Procedures exist for the correlation of air activity levels to dose rate for key isotopes. Provisions have been established for estimating integrated dose from the projected and actual dose rates and for the comparison of these estimates with the protective action guides.

11. State Monitoring Capabilities:

The State of New York has the ability to dispatch its own offsite monitoring teams to conduct ingestion pathway monitoring. The state also has the ability and resources to coordinate with Federal and licensee monitoring teams to compare sample results.

Part 2: PLANNING STANDARDS AND CRITERIA

Section J: Protective Response

Protective response consists of emergency actions taken during or after an emergency situation, which are intended to minimize or eliminate hazards to the health and safety of the public and/or Station personnel. A range of protective actions has been developed for emergency workers and the general public in the plume exposure pathway Emergency Planning Zone (EPZ). Additionally, guidelines have been established to aid in choosing protective actions during an emergency that are consistent with federal guidance. Entergy is responsible for onsite protective actions, while the responsibility for offsite protective actions rests with the State of New York, local authorities and other offsite response agencies.

1. Notification of Onsite Personnel:

   a. For all emergency classifications, all station personnel, contractors, visitors and Owner Controlled Area (OCA) badged personnel are notified of an emergency by the public address system, distinct audio signals (air raid alert, fire, site assembly or containment evacuation alarms) and/or alternate methods. Announcements include the emergency classification and response actions to be taken by site personnel.

      The Public Address System(s) are designed for paging persons within the site Protected Area from the Control Rooms. Personnel have the ability to talk to the Control Rooms via party line phones that are strategically located within the units. Plant personnel may initiate the communication to the Control Room from outlying party lines.

   b. Visitors within the Protected Area are escorted at all times by badged personnel who will ensure that the visitor takes the proper actions for the event.

   c. Contract personnel who have un-escorted access to the Protected Area must complete Plant Access Training that includes instructions for actions to be taken during an emergency.

   d. Accountability of persons within the Site Boundary but outside the Protected Area is not required. However, the Security Force will ensure that individuals in the Owner Controlled Area (including individuals with OCA badges) are notified as necessary of any emergency and the response actions to be taken.

2. Evacuation Locations:

   Assembly areas and evacuation routes are specified in the Emergency Planning Implementing Procedures. Depending on meteorological conditions, the Shift Manager/ ED decides whether to release plant personnel and the appropriate evacuation routes. Inclement weather, high traffic density and specific radiological conditions and other hazards are considered in making this decision. The release of personnel is under the direction of the Shift Manager/ED. Personnel are released to go home or continue from the site to assembly areas using their own cars when practical or other transportation provided by Indian Point Energy Center.

3. Radiological Monitoring:

   Radiological monitoring of personnel, their possessions and their automobiles would be performed by Radiation Protection or trained monitoring personnel using instrumentation that is normally available or specifically assigned for this purpose. Personnel may be evacuated/released as part of the general public to offsite relocation centers designated by offsite authorities.

4. Assembly & Evacuation:

   Relocation outside the Protected Area and/or evacuation is the primary protective action anticipated for onsite personnel not having emergency response assignments. Non-essential personnel (personnel not assigned emergency response functions, contractors and visitors) are directed to assemble at pre-designated assembly areas at the Alert or higher classification. The primary assembly area is the Indian Point Energy Center Generation Support Building (GSB) and the Energy Education Center (EEC). The Indian Point Energy Center Training Center serves as the back-up assembly area and may be used during periods of high volume, such as an outage. Personnel assigned emergency response functions respond to their assigned emergency facilities.

   Assembly areas and evacuation routes are described in the Implementing Procedures. Assembly areas are located to assure that personnel are not in the path of the plume. Each assembly area has a telephone. The assembly areas (GSB and IPEC Training Building) are within the range of the plant paging system.

   Evacuation / release of non-essential Indian Point Energy Center personnel is initiated upon declaration of either a Site Area Emergency or General Emergency. The ED may release personnel at a lower classification.

5. Accountability:

   At the declaration of an Alert, all non-essential personnel are relocated from within the Protected Area. At a Site Area Emergency or General Emergency all individuals within the Protected Area are accounted for and the names of missing individuals are identified within 30 minutes of a declared emergency. Once established, accountability within the Protected Area is maintained throughout the course of the event, unless conditions allow suspension in the later stages of the event. Should missing personnel be identified, search and rescue operations are initiated. Accountability is coordinated between the OSC Manager and Security. The results are forwarded to the Emergency Plant Manager and/or ED.

   Accountability could be suspended if movement of personnel would place them in more danger than leaving them in place, such as outside weather conditions or security events.

   Personnel who are assembled outside the protected area are given further instructions. These instructions may include sheltering in place, evacuation or, individuals may be requested to assist the ERO in accident mitigation.

   If site evacuation is called for, Security will sweep all onsite areas outside the Protected Area and verify all personnel have evacuated or been released.

6. Provisions for Onsite Personnel:

The station maintains an inventory of respiratory protection equipment, anti-contamination clothing, and a supply of KI that is made available to emergency workers remaining onsite should conditions warrant.

a. Self-contained breathing apparatus (SCBAs) and full-face respirators are used as the primary method of respiratory protection in an emergency. Emergency response personnel use SCBAs in any environment involving exposure to high-level gaseous activity or oxygen deficient atmosphere, or where air quality is in doubt. In the presence of airborne particulates, emergency response personnel may be directed by Radiation Protection personnel to use full-face filter type respirators.

b. Anti-contamination clothing, located in the Operations Support Center (OSC) lockers, is available for use by onsite personnel entering areas of plant with known or unknown contamination.

c. The use of thyroid-blocking Potassium Iodide (KI) may be recommended at 5 Rem CDE child thyroid or when a General Emergency condition initiates the recommendation to State and Counties to implement KI Program. This is a lower value than specified by EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents". A supply of KI is maintained in the Emergency Response Facilities. Procedures are in place for the use of these agents by emergency response personnel. Administration of KI may be authorized only by the ED or by the Emergency Plant Manager.

d. Precautions shall be taken to prevent the contamination of drinking water and food supplies by using bottled water and packaged foods.

e. A range of protective actions to protect onsite personnel during hostile action is provided to ensure the continued ability to safely shut down the reactor and perform the functions of the emergency plan.

7. Protective Action Recommendations for the General Public:

   Plant conditions, projected whole body gamma and thyroid doses, and/or field monitoring data are evaluated to develop protective action recommendations for the purpose of preventing or minimizing exposure to the general public. Protective action recommendations for the plume exposure pathway are based on the Environmental Protection Agency (EPA) Protective Action Guides (PAGs) discussed in EPA-400-R-92-001 - "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents" and NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 3, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Guidance for Protective Action Strategies".

   Protective action recommendations are made directly to the State and local agencies that are responsible for implementing protective actions for the general public within the plume exposure EPZ. The ED makes protective action recommendations.

   Recommendations issued by Indian Point Energy Center at a General Emergency based on plant conditions include as a minimum, evacuation in the two (2) mile radius and five (5) miles downwind and advising the remainder of the EPZ population to monitor EAS messages for further direction. The Indian Point Entergy Center's rationale and methodology for plant-based and dose-based protective action recommendations has been coordinated with local and state response organizations as required by NUREG-0654, Supplement 3.

8. Evacuation Time Estimates:

   An independent evacuation time study has been performed to provide estimates, of the time required to evacuate commercial, resident and transient populations (see Appendix 5).

9. Protective Measure Implementation:

   State and local agencies are responsible for implementing offsite protective actions. These actions are included in the State and County Emergency Plans. Entergy is responsible for recommending offsite protective actions to the offsite authorities.

10. Factors Affecting Protective Measure Implementation

    The State, and County emergency plans used to implement the protective measures for the plume exposure pathway take numerous factors into consideration. Among these considerations are:

    a. Most of the evacuating population will travel in their own vehicles, leaving the EPZ via designated evacuation routes. Maps showing the evacuation routes, evacuation Protective Action Areas, reception centers in host areas, and congregate care centers have been developed as part of the state and local plans. Pre-selected sampling and monitoring points have also been identified.

    b. The population distribution around Indian Point Energy Center is presented in the Evacuation Time Estimate.

c. Section E of this Plan describes how offsite agencies are notified in the event the Plan is activated. State and local agencies have the capability to notify all members of the transient and resident population within the plume exposure EPZ.

d. State and local organizations have the capability to protect those persons where mobility may be impaired due to such factors as institutional or other confinement. At the time of an emergency, transportation requirement of special needs persons (including mobility impaired) is verified. Mobility impaired will be notified of a protective action via the Emergency Alert System (EAS).

e. An adequate supply of potassium iodide (KI) is available for distribution by state and local organizations to special facility staff and patients/residents where immediate evacuation would be life threatening. Authority for use of radioprotective drugs rests with the NY Health Department.

f. State and local organization plans include the method by which decisions are made for administering radioprotective drugs to emergency workers. The distribution of radioprotective drugs to the general public has been authorized by the State. Each individual County's Emergency Plan addresses pre and post distribution of radioprotective drugs.

g. State and local organizations have the capability of providing a means of relocation for the general population. Most of the evacuating population will travel in their own vehicles, driving out of the EPZ using designated evacuation routes. Transportation dependent persons will be instructed through the Emergency Alert System (EAS) to go to a pickup point or bus route for transportation to a reception center.

h. State and local organizations are capable of providing reception centers in host areas that are beyond the boundaries of the plume exposure pathway emergency-planning zone.

i. Projected traffic capacities have been determined for evacuation routes under emergency conditions. Section 4 of the Evacuation Time Estimate provides discussion regarding capacity.

j. Federal, State and local organizations have the responsibility for the control of access to evacuated areas. Personnel from New York State Police and local police departments' staff access control points. The New York Highway Department and local public works departments provide necessary equipment to support access control. The U. S. Coast guard would assist in patrolling the Hudson River areas.

k. Potential impediments to the use of evacuation routes and contingency measures for such impediments have been identified in local emergency plans.

l. Time estimates for evacuation of various groupings of Protective Action Areas have been performed, under various conditions for the plume exposure pathway emergency-planning zone.

m. The basis for dose driven protective action decisions by offsite authorities would include several of the above factors as well as the following considerations:

- If projected doses exceed minimum EPA PAGs and timely evacuation is feasible, then evacuation is recommended. If timely evacuation is not feasible, (i.e. time required for mobilization, warning and evacuation transit is greater than time before plume arrival), then State authorities may direct sheltering in place.

- Additionally, if the sheltering dose exceeds the PAG but is less than the projected evacuation dose, then sheltering is considered. A shielding factor of 0.9 is conservatively assumed in the calculation of the sheltering dose. This factor (from SANDIA 77-1725) represents the shielding afforded by a wood frame house. The decision to shelter is the responsibility of the offsite authorities.

11. Ingestion Pathway Protective Measures:

The responsibility for specifying protective measures to be used for the ingestion pathway rests with the States of New York, Pennsylvania, Connecticut and New Jersey. These measures include the methods for protecting the public from consumption of contaminated water and foodstuffs.

12. Monitoring of Evacuees:

The State and local organizations have the capability to register and monitor evacuees at reception centers at host communities. This capability includes personnel and equipment capable of monitoring residents and transients evacuating from the plume exposure EPZ and arriving at the reception centers, in accordance with FEMA guidelines.

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Section K: Radiological Exposure Control

This section of the Plan describes the means for controlling emergency worker radiological exposures during an emergency, as well as the measures that are used by Entergy to provide necessary assistance to persons injured or exposed to radiation and/or radioactive materials. Exposure guidelines in this section are consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides, EPA 400-R-92-001.

The general guideline for emergency personnel exposure will be to keep it as low as reasonably achievable.

1. Emergency Exposure Guidelines:

Radiation exposure in an emergency is controlled taking every reasonable effort to minimize exposure. However, circumstances may warrant exposure in excess of 10CFR20 limits. Saving a life, measures to circumvent substantial exposures to the general public, or the prevention of damage to critical equipment may be sufficient cause for above normal exposures. The following are the exposure guidelines for emergency activities:

Dose Limit (Rem TEDE)	Activity	Condition
0-5*	All	Personnel may be kept within normal 10 CFR 20 occupational limits during declared emergencies or an emergency exposure up to 5 Rem TEDE may be authorized for members of the ERO.
5 - 10	Protecting critical infrastructure necessary for public welfare	Lower dose not practicable. Must be authorized on individual bases.
10 - 25	Lifesaving or protection of large populations	Lower dose not practicable. Must be authorized on individual bases.
> 25	Lifesaving or protection of large populations	Only on a voluntary basis to persons fully aware of the risks involved. Must be authorized on individual bases.
* Limit dose to the lens of the eye and dose to any other organ (including skin and body extremities) to 10CFR20.1201 limits unless higher doses are evaluated and authorized on individual bases.		

Any emergency response action requiring greater exposure than 25 Rem should be limited to only volunteers. Individuals over forty-five years of age are considered first. Females who declare pregnancy are restricted to 10CFR20.1208 limits.

2. Emergency Radiological Control Program:

The Radiological Assessment Coordinator (EOF) and the Rad/Chem Coordinator (OSC) ensure that proper personnel radiological monitoring equipment is provided for all personnel during emergency conditions, that exposure accountability is maintained, and that personnel are not allowed to enter known or potential high radiation areas unless their exposure has been properly evaluated. Plan Implementing Procedures detail the emergency radiological controls utilized during emergencies. Radiation protection guidelines during emergencies include the following:

- Persons undertaking any emergency operation in which the dose will exceed 25 Rem TEDE should do so only on a voluntary basis and with full awareness of the risks involved including the numerical levels of dose at which acute effects of radiation will be incurred and numerical estimates of the risk of delayed effects.
- In the context of the emergency limits, exposure of workers that is incurred for the protection of critical infrastructure, lifesaving or protection of large populations may be considered justified for situations in which the collective dose avoided by the emergency operation is significantly larger than that incurred by the workers involved.
- Exposure accountability is maintained and proper personnel radiological monitoring equipment is provided for all personnel during emergency conditions.
- Access to high radiation areas is only permitted with prior approval of the applicable Radiation Assessment Coordinator (EOF) or Rad/Chem Coordinator (OSC), and personnel are not allowed to enter known or potential high radiation areas unless their exposure has been properly evaluated.
- Periodic habitability surveys of emergency facilities are performed during an emergency. If the facility is determined to be uninhabitable, the facility is evacuated in order to prevent or minimize exposure to radiation and radioactive materials. Alternate assembly areas are established, as necessary, to relocate and monitor evacuated personnel.

Potassium Iodide (KI) shall be used in accordance with New York State Policy for issuance of KI. If the risk of using KI outweighs the benefit, KI may not be issued. KI is stored in onsite Emergency Response Facilities.

3. Personnel Monitoring

   a. If abnormal radiological conditions exist outside the Radiologically Control Area (RCA), exposure to emergency response personnel not issued Dosimetry of Legal Record (DLR) badges will be tracked by use of surveys and time spent in radiation areas.

   b. Workers who would be expected to enter the RCA are trained and issued DLR badges. In addition to these badges, dosimetry devices will be issued, high range or electronic dosimeters and/or alarming self-indicating dosimetry, are used to monitor emergency workers exposure during an accident. The capability exists for the emergency processing of DLRs on a 24-hour per day basis, if necessary. Emergency workers are instructed to read self-indicating dosimeters frequently, and DLRs may be processed with increased periodicity.

   c. Emergency worker dose records are maintained in accordance with one or more Plan Implementing Procedures and Radiation Protection Procedures.

4. Non-Entergy Personnel Exposure Authorization:

   The responsibility for authorizing non-Entergy emergency workers (i.e. State and local agency emergency workers such as Fire Department, Police or Medical teams sent to the site) to receive exposures in excess of the EPA Emergency Worker Protective Action Guides rests with the respective State and local organizations.

5. Decontamination and First Aid

   a. Normal contamination control limits apply in emergency conditions. However, these limits may be modified by Rad/Chem Coordinator or the Radiological Assessment Coordinator should conditions warrant.

   b. Decontamination materials and portable first-aid kits are stored within the Protected Area and at the EOF / Warehouse Complex. A personnel injury onsite involving possible radioactive contamination is initially treated by an on-shift first responder or EMT if available. Prompt attention is given to life endangering injuries such as extensive burns, serious wounds or fractures, in preference to decontamination. If the injury permits, all reasonable effort is made to decontaminate the individual prior to movement. If decontamination is impractical, the patient is covered in such a manner as to minimize the spread of contamination until medical aid can be obtained or the patient can be hospitalized.

The Verplanck Fire Department ambulance is the primary provider of prompt transportation of persons requiring medical attention from the station to area hospitals. This service is available on a 24-hour per day basis. For accidents involving contamination, if a Radiation Protection Technician (RP) is available, then one will be assigned to accompany the patient to the hospital to assist and advise ambulance and hospital personnel.

Patients requiring Emergency Room care, laboratory work, X-rays or lifesaving procedures are transported to the New York-Presbyterian/Hudson Valley Hospital (primary), to Phelps Memorial Hospital Center (backup) or another equipped medical facility. Hospital personnel have been trained and hospitals are equipped to handle radiologically contaminated or radiation injured individuals. Medical personnel may recommend transportation to other medical facilities equipped for long term or intensive care for radiation injuries. Radiation Protection personnel are available to assist medical personnel with decontamination, radiation exposure and contamination control.

6. Contamination Control Measures

   a. Areas in the plant found to be contaminated are isolated as restricted areas with appropriate radiological protection and access control as directed by the Rad/Chem Coordinator.

   b. In order to preclude the spread of contamination from restricted areas, all personnel and equipment are monitored for radioactive contamination prior to exiting the restricted areas. Contaminated personnel are decontaminated. Eating, drinking and smoking are prohibited in all Emergency Response facilities until such time as habitability surveys indicate that such activities are permissible.

   c. Restricted areas will be returned to normal use when contamination levels have been returned to acceptable levels.

7. Decontamination of Relocated Personnel:

   Non-essential onsite personnel are released from the Protected Area during an emergency, if radiological concerns occur. Radiation Protection personnel and/or portal monitors are used to monitor personnel released from the Protected Area and decontamination is performed, as needed. Existing and temporary facilities to limit contamination and exposure will be utilized and established at the site as necessary during an emergency situation. In the event that decontamination of onsite personnel locally is not possible, personnel will be sent to a county emergency worker personnel monitoring center for monitoring and decontamination. Provisions for extra clothing, as well as suitable decontaminates are available.

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Section L: Medical and Public Health Support

This section describes the Indian Point Energy Center's arrangements for medical services including contaminated injured individuals sent from the Station.

1. Hospital Services:

   The New York-Presbyterian/Hudson Valley Hospital in Cortlandt Manor has agreed to accept patients from the Indian Point Energy Center Site who have been injured, contaminated or irradiated. This is a modern hospital with facilities such as an emergency room, a laboratory, a radiology department and a nuclear medicine department. A written agreement is referenced in Appendix 2.

   The Phelps Memorial Hospital Center, Sleepy Hollow, New York has agreed to serve as the backup hospital. A written agreement is referenced in Appendix 2.

   Station procedures contain directions that cover the request for medical assistance and the handling of patients. In the event that a patient should receive a massive radiation exposure, then Radiation Emergency Assistance Center/Training Site (REAC/TS), available 24 hrs/day, would be contacted for guidance. A written agreement is referenced in Appendix 2.

2. Onsite First Aid Capability:

   A First Aid Room in a non-radiation area is on el. 15 of the Unit 1 Administration Building. This room contains general first aid equipment, oxygen breathing apparatus and an examination table for non-contaminated patients.

   First Aid and Decontamination facilities for both units are located just beyond the Radiation Protection Control Points. These facilities consist of a stainless steel interior with decontamination table, showers and sinks draining into holdup tanks. These facilities contain general first aid equipment and medical supplies for treatment of injuries.

   A medical facility is located at the Indian Point Energy Center Training Center. General first aid equipment including bandages and dressings, splints, etc., is available as well as an examination area.

   First Aid Kits are located in several locations throughout the station.

3. Medical Service Facilities:

   The State of New York maintains a list of public, private and military hospitals and other emergency medical facilities considered capable of providing medical support for any contaminated injured individuals. A medical consultant company which specializes in treatment of radiological related injuries is contracted to provide assistance if needed.

4. Medical Transportation:

   Indian Point Energy Center has arranged with a local ambulance service for transporting victims of radiological accidents to medical support facilities.

   Arrangements have been made for transporting injured, contaminated and irradiated personnel to the hospital via the Verplanck Fire District (Fire/Ambulance) that provides 24-hour services. Backup ambulance service is available through a mutual aid system. A written agreement is listed in Appendix 2. The Verplanck Fire District (Fire/Ambulance), or other backup ambulance agency, participates in annual medical emergency drills as described in Section N.

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Section M: Re-entry and Recovery Planning

This section describes the measures to be taken for re-entry into the areas of Indian Point Energy Center that have been evacuated as a result of an accident. It also outlines the Indian Point Recovery Organization and its concepts of operation.

1. Re-entry and Recovery:

Re-entry:

During an emergency, immediate actions are directed toward limiting the consequences of the accident, so as to afford maximum protection to Station personnel and the general public. Once corrective measures have been taken and effective control of the plant has been re-established, a more methodical approach to re-entry is taken. This Emergency Plan therefore divides re-entry into two separate categories:

- Re-entry during the emergency phase of an accident is performed to save a life, control a release of radioactive material, prevent further damage to plant equipment or restore plant equipment. If necessary, this category of re-entry may be performed using emergency exposure limits. Briefings and emergency forms, rather than written radiation protection procedures, operating procedures and maintenance procedures can be used when making these entries.

  The Shift Manager and/or the Control Room Supervisor direct re-entry activities prior to activation of the Emergency Facilities. Once the TSC/OSC has been activated, all re-entry activities conducted during the emergency are authorized by the Emergency Plant Manager (EPM) and coordinated through the Operations Support Center.

- Re-entry during the recovery phase is performed using normal exposure limits. Either normal procedures or procedures developed specifically for each re-entry are utilized.

  The Site Recovery Director or the station's normal management organization oversees the re-entry. Generally, site problems are addressed first to make the site tenable for workers; with a series of radiation surveys to establish accessibility and then steps are taken restore the station to normal operations.

  All data gathered from re-entry operations and additional information developed by the various technical support groups will be assessed.

  The plan is to return plant conditions to within Technical Specification limits and it may include detailed schedules, specialized equipment and personnel, preparing procedures for decontamination, processing highly radioactive water, repairing equipment, and purchasing equipment. A station nuclear safety/review committee reviews and approves recovery operations in accordance with its charter and the Technical Specifications.

Recovery:

Recovery is defined as those steps taken to return the plant to its pre-accident condition. Radiation exposure to personnel involved in the recovery will be kept at a minimum and within the stated limits of 10 CFR 20. Radiation areas will be roped off and posted with warning signs indicating radiation levels and permissible entry times based on survey results. Access to these areas will be controlled, and exposures to personnel entering such areas documented. Shielding will be employed to the fullest extent possible. Survey results, interviews of individuals with direct knowledge of recent conditions in the affected area(s) and all other pertinent information collected from logs and other records or indicators in the Control Room and in the Emergency Operations Facility may be used to evaluate the advisability and the timing of re-entry to affected areas.

The ED, after consulting with the EOF Manager, Company Spokesperson, the Emergency Plant Manager and the Plant Operations Manager, has the responsibility for determining when an emergency situation is stable and the station is ready to enter the recovery phase. Prior to terminating an emergency and entering the recovery phase, the following conditions are considered:

- Do conditions still meet an Emergency Action Level? If so, does it appear unlikely that conditions will deteriorate?
- Radioactive releases are under control and are no longer in excess of Technical Specification limits.
- The radioactive plume has dissipated and plume tracking is no longer required. The only environmental assessment activities in progress are those necessary to assess the extent of deposition resulting from passage of the plume.
- In-plant radiation levels are stable or decreasing, and acceptable, given the plant conditions.
- The potential for uncontrolled radioactive release is acceptably low.
- The reactor is in a stable shutdown condition and long-term core cooling is available and adequate. There is no foreseeable danger of losing heat removal capability
- Containment pressure is within Technical Specification limits.
- Any fire, flood, earthquake or similar emergency condition no longer exists.
- All required notifications have been made.
- Discussions have been held with Federal, State and local agencies and agreement has been reached to terminate the emergency.

- At an Alert or higher classification (non-transitory classification), the ERO is in place and emergency facilities are activated.
- Any contaminated injured person has been treated and/or transported to a medical care facility.
- Offsite conditions do not unreasonably limit access of outside support to the station.

It is not necessary that all conditions listed above be met; however, all items must be considered prior to entering the recovery phase. For example, it is possible after severe accidents that some conditions remain which exceed an Emergency Action Level, but entry into the recovery phase is appropriate.

2. Recovery Organization

Once the decision is made to enter the recovery phase, the extent of the staffing required for the Indian Point Recovery Organization is determined.

- For events of a minor nature, (i.e. for UNUSUAL EVENT classifications) the normal on shift organization is normally adequate to perform necessary recovery actions.
- For events where damage to the plant has been significant, but no offsite releases have occurred and/or protective actions were not performed, (i.e. for ALERT classifications) the Indian Point ERO, or portions thereof, should be adequate to perform the recovery tasks prior to returning to the normal Station organization.
- For events involving major damage to systems required maintaining safe shutdown of the plant and offsite radioactive releases have occurred, (i.e. for SITE AREA EMERGENCY or GENERAL EMERGENCY classifications) the Indian Point and Corporate Emergency Center Manager is put in place.

The specific members of the Indian Point Recovery organization are selected based on the sequence of events that preceded the recovery activities as well as the requirements of the recovery phase. The basic framework of the Indian Point Recovery Organization is as follows:

a. The Corporate Emergency Center Manager reports to the Site Recovery Director and is responsible for:
   - Ensuring adequate corporate support to maintain Indian Point Energy Center (IPEC) units in a safe condition;
   - Overseeing development of corporate recovery issues dealing with support of the site;
   - Ensuring Site Recovery Director is aware of Entergy Corporate goals and expectations for recovery of IPEC after an event;
   - Ensuring adequate support to the site to carry out recovery activities.

b. The Site Recovery Director is charged with the responsibility for directing the activities of the Indian Point Recovery organization. These responsibilities include:

- Ensuring an Event Summary Report is prepared and transmitted to offsite authorities;
- Overseeing the development of and approving a Recovery Plan and any special recovery procedures. The Recovery Plan shall address both short term and long-term actions and provide guidance on when Recovery is to be terminated. A specific instruction for the development of a Recovery Plan is provided in an Implementing Procedure;
- Deactivating any of the Indian Point ERO that was retained to aid in recovery, in the appropriate manner. Depending upon the type of accident and the onsite and offsite effects of the accident, portions of the Indian Point ERO may remain in place after initiation of the recovery phase;
- Coordinating the integration of available Federal and State assistance into onsite recovery activities;
- Coordinating the integration of Indian Point Energy Center support with Federal, State and local authorities into required offsite recovery activities;
- Verifying and approving information released by the public information organization that pertains to the emergency or the recovery phase of the accident;
- Maintaining a record/log of specific recovery actions taken;
- Working with senior company management in providing for assistance to Entergy Employees affected by the event; and
- Determining when the recovery phase is terminated. Recovery will be terminated when actions identified in the Recovery Plan have been completed.

c. The Onsite Recovery Manager reports to the Site Recovery Director and is responsible for:

- Identifying and documenting issues relating to Recovery operations;
- Coordinating the development and implementation of the recovery plan and procedures;
- Directing all onsite activities in support of the recovery of Indian Point Energy Center;
- Designating other Indian Point Energy Center recovery positions required in support of onsite recovery activities; and
- Developing of a Root Cause Report.

The Plant Manager or a designated alternate will become the Onsite Recovery Manager.

d. The Offsite Recovery Manager reports to the Site Recovery Director and is responsible for:

- Offsite activities during the Recovery phase include assisting State and local authorities to survey, map and decontaminate areas necessary to return the general public evacuated from around the site;
- Providing liaison with offsite agencies and coordinating Indian Point Energy Center assistance for offsite recovery activities;
- Coordinating Indian Point Energy Center ingestion exposure pathway EPZ sampling activities and the development of an offsite accident analysis report;
- Developing a radiological release report; and
- Designating other Indian Point Energy Center recovery positions required in support of offsite recovery activities.

A member of Emergency Planning Department Management or a designated alternate will serve as the Offsite Recovery Manager.

e. The Company Spokesperson reports to the Site Recovery Director and is responsible for:

- Functioning as the official spokesperson to the press for Indian Point Energy Center on all matters relating to the accident or recovery;
- Coordinating non-Indian Point Energy Center public information groups (Federal, State, local, etc.);
- Coordinating media monitoring and rumor control; and
- Determining what public information portions of the Indian Point ERO will remain activated.

A senior Indian Point Energy Center management individual or a member of the company's Public Information Group is designated as the Company Spokesperson.

The remainder of the Indian Point Recovery Organization is established and an initial recovery plan developed at the end of the emergency phase or just after entry into the recovery phase. Consideration is given to recovery activity needs and use of the normal Indian Point Energy Center organizations. Individual recovery supervisors may be designated in any or all of the following areas:

- Training
- Radiation Protection
- Chemistry
- Technical Support
- Engineering Support
- Quality Assurance
- Operations
- Security
- Maintenance
- Special Offsite Areas (Community Representatives, Environmental Samples, Investigations, etc.)

3. Recovery Phase Notifications:

When the decision is made to enter the recovery phase, all members of the Indian Point ERO are informed of the change. Additional Indian Point Energy Center personnel are instructed of their roles in relation to the Indian Point Recovery Organization and their responsibilities to the recovery effort.

4. Total Population Exposure:

A method has been developed for estimating the total population exposure resulting from the accident. Total population exposure calculations are performed during the recovery phase of an accident. Cumulative data are collected from Indian Point ERO records to estimate the source term. Data are obtained from offsite agencies to estimate the total exposed population. Environmental Dosimeter of Legal Record (DLRs), Bioassays, and continuing environmental monitoring results will be analyzed to provide additional data.

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Section N: Drill and Exercise Program

This section describes the Drill and Exercise Program that Entergy has implemented to:

- Verify the adequacy of the Indian Point Emergency Preparedness Program.
- Develop, maintain and evaluate the capabilities of the Indian Point ERO to respond to emergency conditions and safeguard the health and safety of Station personnel and the general public.
- Identify deficiencies in the Plan and the associated Procedures, or in the training of response personnel, and ensure that they are promptly corrected.
- Ensure the continued adequacy of emergency facilities, supplies and equipment, including communications networks.

1. Exercises

   a. Federally prescribed Exercises are conducted biennially, which involve implementation of the participants' emergency plan(s) and activation of major portions of participating emergency organizations. Where full participation by offsite agencies occurs, the sequence of events simulates an emergency that may result in the release or potential release of radioactivity to the offsite environs, sufficient in magnitude to warrant a response by offsite authorities. Offsite agencies involved in the planning effort for an emergency at the station shall be invited to participate at least every two years. For exercises involving only partial participation by these agencies, emphasis is placed on development and conduct of an exercise that is more operationally realistic. Players will be able, by implementing appropriate procedures and corrective actions, to determine the outcome of the scenario to a greater extent than when core damage and the release of radioactivity are prerequisites for demonstration of all objectives.

   b. Exercises provide an opportunity to evaluate the ability of participating organizations to implement a coordinated response to postulated emergency conditions. In accordance with the Indian Point Energy Center (IPEC) Eight-Year Exercise Cycle Plan (maintained in accordance with a fleet procedure), exercises are conducted to ensure that all major elements of the emergency plan and preparedness program are demonstrated. Exercises are scheduled to be conducted at different times of the year. An unannounced drill/exercise is included in the Eight-Year Exercise Cycle Plan.

2. Drills:

In addition to the exercises described above, IPEC conducts drills for the purpose of training, testing, developing and maintaining the proficiency of emergency responders. Drills and/or surveillance tests are conducted at the IPEC for the following:

a. Communication Drills or Surveillance Tests:

- Monthly: The Radiological Emergency Communication System (RECS) link between the Control Room, EOF/AEOF and the State and four county Warning Points will be tested.
- Monthly: The Emergency Notification System (ENS) with the NRC will be tested.
- Quarterly: The telephone links with Federal response organizations (i.e., Department of Energy Radiological Assistance Program) and local governments within the ingestion pathways will be tested. These links are normally tested by the State.
- Quarterly: The radio communication link between the Emergency Operations Facility, the Control Rooms and with the offsite survey team vehicles will be tested.
- Quarterly: The emergency communications links between facilities will be operationally checked (onsite and offsite facilities.)

Each of these drills or tests includes provisions to ensure that all participants in the test are able to understand the content of the messages (e.g. by requesting repeat-backs of information or verification of message transmittal forms).

Communications systems are also tested during the conduct of training drills and annual exercises. Any discrepancy is noted and actions are initiated to correct problems as soon as possible.

b. Fire Drills: Drills for the Indian Point Fire Brigade are conducted in accordance with Technical Specifications and Station procedures.

c. Medical Emergency Drills: a medical emergency involving a simulated contaminated individual whereby the operations personnel, the hospital, site first-aid team, radiation protection personnel and security force participate is conducted annually at each unit.

d. Radiological Monitoring Team Drills: Radiological Monitoring Team drills are conducted at least annually and include provisions for the collection and analysis of environmental sample media (e.g. water, snow, vegetation, soil, and air), and the monitoring of radiological conditions outside the IPEC Protected Area. These drills include provisions for communications and record keeping.

e. Radiation Protection Drills: At least semi-annually, drills are conducted which involve response to, and analysis of, simulated airborne samples with elevated levels of activity. These drills also involve direct measurements of radiation levels in the Station and may include collection and analysis of sample media (e.g., water, vegetation, soil and air) and provisions for communications and record keeping. Normal station Radiation Protection rules and procedures are followed and emergency Radiation Protection procedures will be simulated.

f. Augmentation Drills: At least semi-annually, drills are conducted to test the ability to augment the on-shift organization. These drills are conducted using the following methods:

- Activation of the automated calling systems for all ERO responders as described in Section B calling in their anticipated arrival times and phone callouts being performed.

- At least once, in the Eight Year Exercise Cycle Plan, a complete call out of ERO as described in Section B will be conducted with actual response to Emergency Response Facilities.

g. Combined Functional Drills: Periodically, drills are conducted to test the interface, coordination, communication, and operation of the onsite emergency facilities including at least two of the following facilities: EOF, TSC, OSC and Joint Information Center. Drills should be developed and conducted to maximize training to participants. Coaching, mentoring, breaks for discussion should all be used when appropriate to aid participants in preparing for an actual emergency.

3. Conduct of Drills and Exercises:

For each emergency preparedness exercise or drill conducted, a scenario package is developed. The information included in the scenario package is in accordance with Entergy Fleet Procedures which include at least the following information:

- The basic Objectives to be demonstrated during the drill or exercise.
- Date(s), time(s), and place(s) of postulated events,
- Scope of the drill or exercise and list of participating organizations,
- The simulated sequence of events and the estimated schedule for major events,
- Evaluation criteria should be provided as necessary to be used in determining the success of the drill or exercise,
- A narrative summary which includes at least the following information:
  - Events that are postulated to occur
  - Extent of simulation
  - Briefing materials to be provided to drill controllers and/or official observers and information on arrangements made for them.

Prior approval of Drill and Exercise Dates, by appropriate IPEC management is obtained for all drills and exercises conducted in support of the Emergency Preparedness Program.

4. Criteria and Evaluation:

Controllers/Observers are assigned to evaluate the drill or exercise performance. Following each drill or exercise, a critique is conducted to evaluate the ability of the participants to implement the Plan and procedures. Biennially, representatives from the NRC observe and evaluate an exercise including an evaluation of the licensee's ability to conduct an adequate self-critical critique. For full offsite participation exercises both the NRC and FEMA observe, evaluate, and critique.

5. Resolution of Drill and Exercise Findings:

The critique and evaluation process is used to identify areas of the IPEC Emergency Preparedness Program that require improvement. The Manager of Emergency Preparedness or his/her designee is responsible for evaluation of all recommendations and comments, entering required corrective actions into the Corrective Action Program and the determination regarding which of the items is to be incorporated into the Emergency Preparedness Program. Feedback is provided to participants through critiques, drill or exercise reports or during annual refresher training.

Part 2: PLANNING STANDARDS AND CRITERIA

Section O: Emergency Response Training

This section describes the emergency response training that is provided to those who may be called upon in an emergency. It outlines the training provided by Entergy to employees and offsite support personnel requiring site access.

1. Assurance of Training:

   Entergy assures the training of appropriate station personnel through implementation of an ERO Training program. Guidance is in place outlining how Initial and Continuing training of the ERO is completed. The required training for the Indian Point ERO positions that are defined in Section B of this Emergency Plan is described here.

   Offsite training is offered to support organizations (fire, ambulance, medical providers, law enforcement agencies, etc.) that may be called upon to provide assistance in the event of an emergency. The following outlines the training received by these organizations:

   a. Specialized training is offered to the offsite agencies (fire, ambulance, medical providers, law enforcement agencies, etc.) that may be called upon to provide onsite assistance in the event of an emergency:

      Training consists of the following:

      - Notification Process
      - Site Orientation
      - Basic Radiation Protection
      - Specific Interface

      These courses do not qualify offsite personnel for unescorted access. Escorts are provided to assist support personnel.

      This training may be provided by the Emergency Planning Department or by appropriate interfacing organizations such as Fire Protection, Security, Safety department and/or the Training Department. The Emergency Planning Department shall monitor training provided by other departments to ensure it meets requirements of this Plan. This requirement will normally be met by performing training observations.

   b. Indian Point Energy Center offers training support, as requested, for State and local agencies whose function is to provide assistance during an emergency at Indian Point Energy Center. Training is offered on an annual basis, or as needed. Training of offsite emergency response organizations is described in their respective radiological emergency plans.

2. Methods of Training

Members of the Indian Point ERO receive general and specialized classroom training as necessary, self-study and / or hands-on emergency response training.

Classroom training is used for initial qualifications as needed to provide individuals with basic knowledge needed to perform assigned functions.

Self-Study training is used for initial overview training and as refresher training for individuals to requalify to an ERO position.

Hands-on training is provided using one or more of the following methods:

- Familiarization Sessions: A familiarization session is an informal, organized tabletop discussion of predetermined objectives.

- Walk-Throughs: Consists of a facility walk-through to familiarize Indian Point ERO personnel with procedures, communications equipment and facility layout. Walk-throughs also provide the opportunity to discuss facility activities, responsibilities and procedures with an instructor.

- Drills: A drill is a supervised instruction period aimed at testing, developing and maintaining skills in a particular operation. Drills described in Section N of this Plan are a part of training. These drills allow each individual to demonstrate the ability to perform assigned emergency functions. During drills, on-the-spot correction of erroneous performance may be made and drill controllers or coaches/mentors will make a demonstration of the proper performance (may be during or subsequent to the drill in progress).

Exercises, drill evaluations and/or written tests are used to evaluate the effectiveness of the training accomplished. All key positions will be evaluated in a drill, exercise or tabletop prior to becoming qualified to fill the assigned position.

3. First Aid Response:

First Responder personnel are trained to respond to medical emergencies.

4. Indian Point ERO Training Program:

The Indian Point ERO personnel who are responsible for implementing this plan receive initial, specialized and annual continuing training. Training program details are maintained in Training Department Procedures.

State and local EOC personnel receive training as outlined in their respective plans. Entergy provides support as requested.

Indian Point Emergency Response Position assignments may be based upon an individual's normal daily function and area(s) of expertise. Position-specific training provides the individual with the skills and knowledge to satisfactorily perform emergency assignments. A computerized system is used to track initial/continuing training and drill/exercise participation.

New Indian Point ERO personnel receive an initial overview course which familiarizes them with the Plan by providing basic information in the following areas as well as specific information as delineated in the sections below:

- Planning Basis
- Emergency Classifications
- Indian Point ERO and Responsibilities
- Callout of Emergency Organization
- Emergency Response Facilities
- Communications Protocol/Emergency Public Information
- Offsite Organizations

Annual continuing training is provided to ensure personnel are informed of changes in the Plan, procedures, organization and facilities. Incumbents (except craft positions) are provided an operating experience reading assignment.

a. Personnel responsible for management of an Emergency (Shift Manager, ED, EOF Manager, Emergency Plant Manager / Plant Operations Manager / TSC Manager and OSC Manager)

   These positions receive specialized training in one or more of the following areas as applicable to their ERO responsibilities:

   - Emergency Classifications
   - Notifications
   - Protective Action Recommendations
   - Emergency Action Levels
   - Emergency Exposure Control
   - Command and Control Practices

b. Personnel Responsible for Accident Assessment:

The skills and knowledge required to perform plant stabilization and mitigation are a normal function of specific Nuclear Operations positions, as identified in Section B of this Plan. Power changes, planned and unplanned reactor shutdowns are handled on a normal operation basis. Subsequent plant stabilization and restoration is pursued utilizing normal operating procedures. Licensed Operators receive routine classroom and simulator training to ensure proficiency in this area.

Those Emergency Organization positions responsible for accident assessment, corrective actions, protective actions, and related activities receive position-specific training, to remove peripheral duties from the Nuclear Operations shift.

c. Radiological Monitoring Teams and Radiological Analysis Personnel

1. Offsite Radiological Monitoring: Offsite radiological monitoring is performed by trained individuals who provide samples and direct readings for dose assessment calculations.

   Offsite Monitoring Team members receive classroom and hands-on training in the following areas:

   - Equipment and Equipment Checks
   - Communications
   - Plume Tracking Techniques

2. Personnel Monitoring: Trained individuals who monitor Station personnel and their vehicles for contamination during an emergency perform personnel monitoring. This monitoring will normally be done by Radiation Protection Technicians who are qualified to do this type of monitoring as part of their normal job.

   If Non-Radiation Protection personnel are to be used as Personnel Monitoring Team members they shall receive classroom and hands-on training in the following areas:

   - Personnel Monitoring Equipment and Techniques
   - Radiological Survey Techniques
   - Contamination Control Techniques
   - Basic De-Contamination Techniques

3. Dose Assessment: Dose Assessment training includes the skills and knowledge necessary for calculation and interpretation of an offsite release and its impact on the environment under any meteorological condition. Individuals responsible for performing dose assessment are trained in the following areas:

   - Computerized and Manual Dose Assessment

- Protective Action Recommendations
- Radiological Monitoring Team Interface
- Protective Action Guidelines associated with offsite plume exposure doses
- Basic Meteorology

d. Police, Security and Fire Fighting Personnel

1. Local Police and Fire Fighting Personnel: The local Police and Fire Departments are invited to receive training as outlined in Part 1.a of this section of the Emergency Plan.
2. Security: Indian Point Emergency Security Response is based upon a normal daily security function that is to safeguard the site. Security personnel receive specialized training in the following areas:
   - Accountability
   - Evacuation
   - Search and Rescue
   - Emergency Response Facility Activation and Access Control
   - Radiation Protection for Security Outpost
3. Onsite Fire Fighting Personnel: Onsite fire fighting personnel are selected from Operations (or other on shift personnel) and receive their emergency response training as part of those groups in accordance with station Fire Protection Program documents.

e. Repair and Damage Control Teams: Operations, Maintenance, Radiation Protection and Chemistry personnel are trained as part of their normal job specific duties to respond to both normal and abnormal plant operations. Part of this training includes an overview of OSC operations and immediate response actions individuals are to take when notified of an emergency and activation of their assigned facilities.

Operations personnel are trained to recognize and to mitigate degrading conditions in the plant. Operations personnel are trained to mechanically and electrically isolate broken or malfunctioning equipment, to isolate fluid leaks and to minimize transients.

Maintenance / I&C personnel are trained to troubleshoot and to repair damaged or malfunctioning electrical, mechanical, or instrumentation systems as appropriate to their job classification.

Radiation Protection personnel are trained to assess the radiological hazards associated with equipment repair and instructs personnel as to the appropriate protective clothing requirements, respiratory protection requirements, time limits, and other protective actions specific to the conditions present.

f. First Aid and Rescue Personnel: First aid and rescue team members receive training as outlined in Part 3 of this section.

g. Local Support Service Personnel: Local support service personnel providing assistance during an emergency are invited to receive training as outline in Parts 1.a and 1.b of this section.

h. Communications Personnel: Indian Point ERO personnel receive training on communications protocol as a part of the initial Emergency Response Overview. Personnel using specialized communications equipment that is not part of their normal daily function receive initial and requalification training on the equipment. Personnel involved in notifications to offsite agencies receive specialized training in the notification process.

i. Personnel responsible for Recovery: ERO personnel receive training on the Recovery organization and their Recovery functions.

j. Drill/Exercise Evaluation Support: Controllers/Observers will be trained on their roles and responsibilities to support drill/exercise control and player evaluation.

5. General, Initial and Annual Training Program Maintenance

a. Plant Access Training: All personnel with unescorted access to the station's Protected Area receive orientation training. Plant Access Training provides initial training and annual requalification training on the basic elements of the Indian Point Emergency Plan for all personnel working at Indian Point Energy Center. These elements include:

- Station emergency alarms and their meaning
- Assembly areas
- Site evacuation procedures
- Special precautions and limitations during an emergency
- Purpose of the Indian Point Emergency Plan
- Role of the worker during emergency

b. Initial Training: Prior to becoming a qualified ERO member, personnel receive a first-time course that provides introductory knowledge to new members of the organization. Indian Point Energy Center provides initial emergency response overview and specific training to assigned ERO members as outlined in the ERO Training Program. Additionally, Indian Point Energy Center offers initial training to those offsite organizations that provide onsite support, as discussed in Part 1.a of this Section.

When an employee successfully completes the training requirements for an assigned emergency position, training is documented and the employee's name is placed on the ERO roster. The completed training documents certify that the individual is qualified to perform their emergency functions.

c. Requalification Training: Annual requalification training is provided to Indian Point ERO personnel. Requalification training consists of one or more of the following:

- Annual Requalification Evaluation
- Classroom or hands-on training addressing changes to the Indian Point ERO, facilities, procedures and equipment
- Drill participation

d. Update Training: In some cases, it may be necessary to provide additional training prior to the annual requalification training. Changes to this Plan, Indian Point ERO, procedures, facilities or equipment may require training in an effort to maintain a proficient Indian Point ERO.

Program changes or deficiencies identified during drills, exercises or audits may require training to be performed prior to annual requalification training. Emergency Preparedness management evaluates the impact of these changes or deficiencies upon the effectiveness of the organization. As a result of this evaluation process, one or more of the following may occur:

- Specialized Classroom Training
- Hands-On Training
- Required Reading
- Drills
- Memo (email) Notifications

Part 2: PLANNING STANDARDS AND CRITERIA

Section P: Responsibility for the Maintenance of the Planning Effort

This section describes the responsibilities for development, review distribution of the Plan and actions that must be performed to maintain the Indian Point Emergency Preparedness Program. It also outlines the criteria for ensuring that personnel who perform the planning are properly trained.

1. Emergency Planning Staff Training

   Emergency Planning Staff Members receive on-going training and experiences to maintain or improve their knowledge related to emergency planning. At least once each calendar year members of the Emergency Planning staff are involved in one of the following activities:

   - Training courses specific to emergency preparedness.
   - Training courses related to emergency preparedness management, such as problem solving, stress management or confrontation/media relations' courses.
   - Observation of or participation in drills and/or exercises at other utilities or stations.
   - Participation in industry review and evaluation programs.
   - Participation in regional or national emergency preparedness seminars, committees, workshops or forums.
   - Indian Point Energy Center (IPEC) Training courses in related areas, such as systems, operations, or radiological protection training.

2. Authority for Emergency Preparedness Effort:

   The Site Vice President has overall authority and responsibility for the Indian Point Emergency Preparedness Program. This includes the authority to provide the necessary resources to ensure the continuous state of readiness for the ERO.

   The General Manager Plant Operations (GMPO) is responsible for ensuring adequate staffing of the ERO.

3. Manager of Emergency Preparedness:

   Entergy has designated a site Manager of Emergency Preparedness who is responsible for the maintenance of the Indian Point Emergency Preparedness Program. In maintaining the program, the Manager of Emergency Preparedness ensures the following:

   - Development, maintenance and revision of the Plan and Implementing Procedures is accomplished in accordance with applicable regulations and industry standards.

- Development and maintenance of 50.54q evaluations of program changes.
- Adequate Entergy support is provided to ensure the maintenance of offsite emergency response plans and procedures for the State and the local communities involved in response to an incident at Indian Point Energy Center.
- Entergy adequately supports the training program for offsite response personnel.
- Development and maintenance of a strong working relationship with State and local authorities responsible for Emergency Preparedness.
- Consistency is maintained between this Plan and its implementing procedures and the Emergency Plans and procedures of the State and local authorities.
- Preparation for and conduct of the EP drill and exercise program, and that the program meets all regulations and guidelines of the NRC.
- Emergency Response Facilities are maintained in a constant state of readiness.
- Appropriate files are maintained to document the activities of the Emergency Preparedness Program as required by law and regulations.
- Work coordinated with the communications group in development and implementation of the Emergency Preparedness Program Public Information program.
- IPEC is appropriately represented at State and local meetings dealing with emergency preparedness matters.
- Preparation of reports to the NRC, FEMA and other agencies on emergency preparedness matters.
- The alert and notification systems are maintained and tested in accordance with approved procedures.
- Emergency Planning staff is involved in a program to maintain an adequate knowledge of state of the art planning techniques and the latest applications of emergency equipment and supplies.
- Emergency Planning staff provides technical assistance to other IPEC organizations in areas of emergency preparedness.
- Coordination of EP Self-Assessment, Audits and Inspections.
- Development of and coordination of the EP budget to ensure program integrity.
- Corrective actions identified during the conduct of Exercises, Drills, Training, Audits and Inspections are tracked using the station's corrective action program.

4. Indian Point Emergency Plan Revisions:

This Plan is reviewed and updated as necessary, on an annual basis. The annual update includes required changes identified during training, drills and exercises. The Manager of Emergency Preparedness is responsible for determining which recommended changes are incorporated into the Plan. Editorial changes to the Plan can be held until the annual Plan update. If no change to the Plan is required a memo to file shall be maintained to document annual review.

Revisions to the Plan that reduce the effectiveness of the Plan, when determined through the technical review process or other changes deemed appropriate by the Manager of Emergency Preparedness will be reviewed by the Onsite Safety Review Committee prior to implementation.

Changes to the Plan are made without NRC approval only if such changes do not reduce the effectiveness of the Plan, and the Plan as changed continues to meet the standards of 10CFR50.47 (b) and 10CFR50, Appendix E. This will be determined using the 50.54q review process. Proposed changes that reduce or have a potential to reduce the effectiveness of the approved Plan are not implemented without prior approval by the NRC.

Plan Implementing and Administrative Procedures shall be developed and revised concurrent with the Plan and reviewed in accordance with station procedures.

Technical reviews of the Plan and procedures shall be conducted in accordance with station procedures. The reviewer shall determine the need for cross-disciplinary reviews. Revisions to the Plan and Implementing Procedures shall be reviewed and approved by the Manager of Emergency Preparedness prior to implementation.

State and County personnel are provided the opportunity to review the Emergency Action Levels (EALs) annually and upon any changes made to the EALs.

5. Emergency Plan Distribution:

Controlled copies of the Plan and Implementing Procedures are issued to all appropriate locations onsite, as well as Nuclear Regulatory Commission. The State and Counties are provided with the Plan only. Verified copies may be used for position specific procedure sets used by the ERO. Procedure requirements include use of revision numbers and required page identifications (i.e. section of plan, revision number, etc.). Controlled copies of the EAL wall charts are issued to appropriate locations. The distribution of these wall charts is maintained by the Emergency Planning Department.

6. Supporting Emergency Response Plans:

   Other plans which support this Plan are:

   - Federal Radiological Emergency Response Plan
   - State of New York Radiological Emergency Response Plan
   - Westchester County Radiological Emergency Response Plan
   - Rockland County Radiological Emergency Response Plan
   - Orange County Radiological Emergency Response Plan
   - Putnam County Radiological Emergency Response Plan

   Each of these plans has associated Implementing Procedures.

7. Implementing and Supporting Procedures:

   Appendix 3 of this Plan contains a listing, by number and title, of those procedures that implement this Plan during an emergency. Administrative procedures that outline the steps taken to maintain the Indian Point Emergency Preparedness Program have been developed. The Implementing Procedures are reviewed biennially.

   Major revisions to the procedures are reviewed by the departments or ERO positions affected (i.e. departments or individuals to whom responsibilities are assigned or changed) prior to their approval. (NOTE: Only one individual qualified for a given position is required to review a procedure change and an ERO facility management position can review changes within his/her facility or functional area.) Implementing procedures are reviewed and approved in accordance with approved station procedures.

8. Cross Reference to Planning Criteria:

   The Plan is formatted in the same manner as NUREG-0654, FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in support of Nuclear Power Plants", Revision 1. This allows for ease in auditing evaluation criteria and eliminates the need for a cross-reference.

9. Review of Indian Point Emergency Preparedness Program: An assessment (audit) of the emergency preparedness program is performed by the Indian Point Nuclear Oversight (NOS) organization. The assessment will be performed either at intervals not to exceed 12 months or as necessary, based on an assessment by NOS against the emergency preparedness performance indicators, and after changes in personnel, procedures, equipment, or facilities that could adversely affect emergency preparedness, but no longer than 12 months after the change. In any case, all elements of the emergency preparedness program are reviewed at least once every 24 months. The Quality Assurance Program provides the management controls for documenting, reporting and retaining audit results and for evaluation and correcting audit findings.

Results of this audit are submitted for review to the Site Vice President. The Manager of Emergency Preparedness ensures that any findings that deal with offsite interfaces are reviewed with the appropriate agencies. Records of the audit are maintained for at least five years.

On an annual basis, a report of the Emergency Planning activities for the year will be presented to the Onsite Safety Review Committee. Such activities include: Plan and procedure revisions, drill/exercise results, and audit/inspection results. Additional activities may be added as deemed appropriate by the Manager of Emergency Preparedness.

10. Maintenance of Emergency Telephone List

A phone list contains telephone numbers used by the ERO during an emergency. These numbers are verified and updated at least quarterly.

Appendix 1: References

References consulted in the writing of this Emergency Plan are listed in this section. With exception of regulatory requirements, inclusion of material on this list does not imply adherence to all criteria or guidance stated in each individual reference.

1. 10CFR50.47, Emergency Plans
2. 10CFR50 Appendix E, Emergency Planning and Preparedness for Production and Utilization Facilities
3. 10CFR20, Standards for Protection Against Radiation
4. Code of Federal Regulations, Title10, Chapter I Parts 70, 73, and 100.
5. Code of Federal Regulations, Title 33, Chapter I, Part 153.
6. Code of Federal Regulations, Title 40, Chapter I, Parts 110, 112, 116, 302 and 355.
7. Code of Federal Regulations, Title 44, Chapter I, Part 401.
8. Code of Federal Regulations, Title 49, Chapter I, Parts 171 and 172.
9. NUREG-0654, FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants
10. NUREG-0696, Revision 1, Functional Criteria for Emergency Response Facilities
11. NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," Dec. 1978.
12. NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations."
13. NUREG-0737, Clarification of TMI Action Plan Requirements, dated October 1980.
14. NUREG-0737, Supplement 1, Requirements for Emergency Response Capability, December 1982.
15. EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
16. "FEMA REP Program Manual"
17. Indian Point Energy Center Unit 1, 2 and 3 FSARs
18. Indian Point Energy Center Unit 1, 2 and 3 Tech Specs
19. USNRC Reg. Guide 1.101, "Emergency Planning & Preparedness for Nuclear Power Plants"
20. 10CFR50, Appendix R
21. SAND 77-1725, Public Protection Strategies for Potential Nuclear Reactor Accidents: Sheltering Concepts With Existing Public and Private Structures, February 1978
22. INPO Emergency Resources Manual

Appendix 1: References (cont.)

23. "Maintaining Emergency Preparedness Manual," dated November, 1987 INPO 87-019.
24. "Federal Bureau of Investigation and Nuclear Regulatory Commission Memorandum of Understanding for Cooperation Regarding Threat, Theft, or Sabotage in U.S. Nuclear Industry," Federal Register, Vol. 44, p. 75535, December 20, 1979.
25. "Voluntary Assistance Agreement By and Among Electric Utilities involved in Transportation of Nuclear Materials," dated November 1, 1980.
26. Comprehensive Environmental Response, Compensation and Liability Act of 1980.
27. Accidental Radioactive Contamination of Human Food and Animal Feeds; Recommendation for State and Local Agencies, Volume 47, No. 205, October 22, 1982.
28. American Nuclear Insurers Bulletin #5B (1981), "Accident Notification Procedures for Liability Insured's".
29. "Potassium Iodide as a Thyroid Blocking Agent in a Radiation Emergency: Final Recommendations on Use," Federal Register Vol. 47, No. 125, June 29, 1982.
30. INPO Coordination agreement on emergency information among USCEA, EPRI, INPO, NUMARC and their member utilities, dated April (1988).
31. Babcock and Wilcox Company, Post Accident Sample Offsite Analysis Program (1982).
32. ANI/MAELU Engineering Inspection Criteria For Nuclear Liability Insurance, Section 6.0, Rev. 1, "Emergency Planning."
33. NEI 99-01 Rev 5, "Methodology for Development of Emergency Action Levels"
34. USNRC Reg. Guide 1.23, Revision 1, "Meteorological Monitoring Programs for Nuclear Power Plants", March 2007
35. INPO 09-006 Guidelines for Training and Qualification of Emergency Response Organization Personnel
36. New York State Comprehensive Emergency Management Plan Radiological Hazards Annex for Fixed Nuclear Facilities
37. NUREG-0654 – FEMA – REP – 1, Revision.1, Supplement 3, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.
38. Westchester County Fire Mutual Aid Plan
39. IPEC Security Safeguards Contingency Plan and Incident Response Plan
40. NSIR/DPR – ISG-01 "Interim Staff Guidance – Emergency Planning For Nuclear Power Plants", ADAMS Accession No. ML113010523 pages 18 to 21.

Appendix 2: Letters of Agreement

Copies of agreement letters for the offsite emergency response supporting organizations listed below are maintained in the Emergency Planning Department files.

1. Verplanck Fire District (Fire/Ambulance)
2. Buchanan Engine Co. No. 1, Inc.
3. New York-Presbyterian/Hudson Valley Hospital
4. Phelps Memorial Hospital Center
5. Department of Energy – Radiation Emergency Assistance
6. Westinghouse Electric Corporation
7. Institute of Nuclear Power Operations (INPO)
8. New York State Police
9. New York State Division of Homeland Security and Emergency Services
10. Department of Energy – Radiological Assistance Program Region 1 (Brookhaven)

As Letters of Agreement are received and updated they will be listed in this section. Regular updates that do not change the level of service do not require an EPLAN change unless they impact the planning standards. Letters listed in this section are the current letters as of the date of this revision.

The Letters of Agreements (LOAs) with outside support organizations and government agencies are reviewed and confirmed annually in accordance with NUREG 0654 P.4. These letters are updated as needed. Letters with no specific end date remain in effect until terminated in writing by either party. This has been agreed to by the applicable supporting agencies.

For hostile action based events, response is provided by Verplanck Fire District, Buchanan Engine Co. No. 1 Inc., and the New York State Police.

Appendix 3: Procedure Cross-Reference to Sections of the Plan

Emergency Plan Implementing Procedures to Plan Sections

Procedure ID Number	Subject Addressed	IPEC Emergency Plan Section(s)
IP-EP-115 EN-EP-900	Emergency Plan Forms	All
IP-EP-120	Emergency Classification	D, Table D-1
IP-EP-210 IP-EP-220 IP-EP-221 IP-EP-230 IP-EP-231 IP-EP-250 IP-EP-251 IP-EP-260 EN-EP-609 EN-EP-610 EN-EP-611 EN-EP-900	Emergency Management	A, B, Table B-1, B-7, C, Appendix 2
IP-EP-210	Control Room Augmentation	B, Table B-1
IP-EP-220 IP-EP-221 EN-EP-610	TSC Activation and Response	B, Table B-1, E, H, M
IP-EP-230 IP-EP-231 EN-EP-611	OSC Activation and Response	B, Table B-1, E, H, M
IP-EP-250 IP-EP-251 EN-EP-609	EOF Activation and Response	B, Table B-1, E, H, M
IP-EP-230 IP-EP-250 IP-EP-350 EN-EP-611	Radiation Protection, Emergency Exposure Controls and Response	J, K, L
IP-EP-240	Emergency Security Organization Activation and Response	B, Table B-1, E, O
IP-EP-241	Incident Command Post	B, Table B-1, E
IP-EP-310 IP-EP-340	Offsite Dose Assessment	I, Table B-1
IP-EP-330 IP-EP-340	Airborne Sample Analysis	C, Appendix 2, I
IP-EP-350	Emergency Contamination Control	K, L
IP-EP-360	Core Damage Assessment	I
IP-EP-410	Protective Action Recommendations	J
IP-EP-420	Use of Potassium Iodide by Indian Point Personnel During and Emergency	K.2

Procedure ID Number	Subject Addressed	IPEC Emergency Plan Section(s)
IP-EP-250 IP-EP-251	Alternate EOF Activation and Response	B, Table B-1, E, H, M
IP-EP-510	Data Equipment Operation	Table B-1, B.5, H
IP-EP-250 IP-EP-320 EN-EP-609	Offsite Monitoring Team Activation and Response	I
IP-EP-230 IP-EP-430 EN-EP-611	Evacuation/Accountability	J
IP-EP-230 IP-EP-430	Search and Rescue	J
EN-EP-613	Recovery	M
IP-EP-340 IP-EP-620	Estimating Total Population Exposure	I, M
IP-EP-260	Joint Information Center Procedure Set	B, G
IP-EP-610	Emergency Preparedness Corporate Support	A, B
EN-EP-311	Emergency Response Data System (ERDS)	Table B-1, H, I
IP-1052	Hazardous Waste Emergencies	Part I, Section C
IP-1055	Fire Emergency Response	Part I, Section C
0-AOP-SEC-2	Air Craft Threat	Part I, Section C

Emergency Planning Administrative Procedures to Plan Sections

The following procedures do not implement the Emergency Plan during emergencies, but do outline maintenance of the program as required by the applicable sections of the Plan.

Procedure ID Number	Subject Addressed	IPEC Emergency Plan Section(s)
IP-EP-AD1	Emergency Preparedness Department Organization and Responsibilities	P
IP-EP-AD2	Emergency Plan Controlled Documents	P
EN-TQ-110	Emergency Response Training Program	O
EN-TQ-110-01	Fleet E-Plan Training Course Summary	O
EN-EP-306	Drills and Exercises	N
EN-EP-307	Hostile Action Based Drills and Exercises	N
EN-EP-308	Emergency Planning Critiques	N
EN-FAP-EP-005	Emergency Preparedness Performance Indicator Program	N
IP-EP-AD6	Emergency Preparedness Department Facilities and Equipment Surveillances	E, F, H, I, J, N
EN-EP-310	Notifications Systems Testing and Maintenance	F, N
IP-EP-AD10	Offsite Emergency Preparedness Support	A, G, L, O
IP-EP-AD13	Emergency Action Levels Technical Basis Document	D, I, J
IPEP-AD-16	Emergency Planning Records	All
IP-EP-AD 17	Emergency Planning Equipment Administration	E, F, H, I, J
EN-EP-801	Emergency Response Organization	A, B, C
IP-EP-AD40	Equipment Important to Emergency Response	D, E, F, G, H, I, J

Procedure ID Number	Subject Addressed	IPEC Emergency Plan Section(s)
IP-EP-AD12 IP-EP-AD20 IP-EP-AD30 IP-EP-AD31 IP-EP-AD32 IP-EP-AD33 IP-EP-AD34 IP-EP-AD35 IP-EP-AD36 IP-EP-AD38 IP-EP-AD39 IP-EP-AD41	IPEC Alert Notification System	E, E.6

Appendix 4

Abbreviations, Acronyms and Definitions

Any abbreviation followed by a lower case "s" denotes the plural form of the term.

AC.....Alternating Current
AD..... Administrative Directive
AEOF.....Alternate Emergency Operations Facility
ALARA..... As Low As Reasonably Achievable
ANI..... American Nuclear Insurers
ANS .....Alert and Notification System
ANSI ..... American National Standards Institute
ARM..... Area Radiation Monitor
Ci ..... Curie
CDE ..... Committed Dose Equivalent
cc .....cubic centimeter
CR.....Control Room
CFR ..... Code of Federal Regulations
CEC ..... Corporate Emergency Center
cm^2 ..... square centimeter
Cs .....Cesium
DC.....direct current
DE.....Dose Equivalent
DHS .....Department of Homeland Security
DLR..... Dosimeter of Legal Record
DOE.....U. S. Department of Energy
DOT .....U. S. Department of Transportation
dpm..... disintegration per minute
EAL..... Emergency Action Level
EAS ..... Emergency Alert System
ED..... Emergency Director
ENS .....(NRC) Emergency Notification System
EOC..... Emergency Operations Center
EOF ..... Emergency Operations Facility
EOP ..... Emergency Operating Procedure
EPA .....U. S. Environmental Protection Agency
EPZ..... Emergency Planning Zone
ERDS.....Emergency Response Data System
ERO..... Emergency Response Organization
ETD ..... Emergency Telephone Directory
FEMA.....Federal Emergency Management Agency

FRERP.....Federal Radiological Emergency Response Plan
FSAR.....Final Safety Analysis Report
Ge.....Germanium
GE.....General Emergency
GET.....General Employee Training
I.....Iodine
ICP.....Incident Command Post
I&C.....Instrument and Control
INPO.....Institute of Nuclear Power Operations
IP.....Implementing Procedure
IP1, IP2, or IP3.....Indian Point Energy Center Unit 1, 2 or 3
IPEC.....Indian Point Energy Center
IPZ.....Ingestion Pathway Zone
IRAP.....Interagency Radiological Assistance Program
ISFSI.....Independent Spent Fuel Storage Installation
JIC.....Joint Information Center
KI.....Potassium Iodide
Kr.....Krypton
Li.....Lithium
LGR.....Local Government Radio
LOCA.....Loss of Coolant Accident
mR.....milliroentgen
MWt.....Megawatt Thermal
NRC.....U. S. Nuclear Regulatory Commission
NUE.....Notification of Unusual Event
NYSOEM.....NYS Office of Emergency Management
OSC.....Operations Support Center
OSRC.....On-Site Safety Review Committee
PAG.....Protective Action Guide
PAR.....Protective Action Recommendation
PASS.....Post Accident Sampling System
POM.....Plant Operations Manager
R.....roentgen
RACES.....Radio Amateur Civil Emergency Services
RCA.....Radiologically Controlled Area
RECS.....Radiological Emergency Communications System
RERP.....Radiological Emergency Response Plan
OMT.....Offsite Monitoring Team

Abbreviations, Acronyms and Definitions

RP ..... Radiation Protection
SAE ..... Site Area Emergency
SCBA ..... Self-Contained Breathing Apparatus
SM ..... Shift Manager
SPDS ..... Safety Parameter Display System
Sr ..... Strontium
STA ..... Shift Technical Advisor
TCP/IP ..... Transfer Communication Protocol/Internet Protocol
TDD ..... Telecommunications Device for the Deaf
TLD ..... Thermoluminescent Dosimeter
TSC ..... Technical Support Center
μCi ..... microcuries
UFSAR ..... Updated Final Safety Analysis Report
Xe ..... Xenon

Definitions

Accountability - The process used by the Onsite Emergency Organization to identify potentially missing and/or injured personnel within the Protected Area during an emergency. This process is accomplished within 30 minutes and is normally maintained throughout the event.

Activated – An order has been made to activate an emergency response facility, and the facility is in the process of being staffed.

Annual – Frequency of occurrence equal to once per calendar year, between January 1st and December 31st.

Area Radiation Monitors - Fixed radiation detectors placed in strategic locations throughout the Station for the purpose of continuously monitoring area radiation dose rates; an integral part of the Radiation Monitoring System that provides the Unit 2 and Unit 3 Control Rooms with remote monitoring capabilities.

Assembly – The process of relocating onsite personnel, during an emergency to a pre-designated location. Generally speaking all onsite personnel who do NOT have an emergency response assignment (non-essential personnel) relocate to an "Assembly Area." Those onsite personnel who are assigned emergency response functions (essential personnel) respond to their assigned emergency facility.

Assembly Area – A pre-designated area to which non-essential personnel relocate during an emergency. The primary Assembly Areas at IPEC are the Generation Support Building (GSB) and the Energy Education Center (EEC). The back-up Assembly Area, normally used only during periods of high personnel volume (e.g. outage), is the Indian Point Energy Center Training Center.

Assessment Actions - Those actions taken during or after an accident to obtain and process information that is necessary to make decisions to implement specific emergency measures.

Biennial – Frequency of occurrence equal to once per two calendar years.

Classification - The classification of emergencies is divided into FOUR (4) categories or conditions, covering the postulated spectrum of emergency situations. Each emergency classification is characterized by Emergency Action Levels (EALs) or event initiating conditions. The four classifications address emergencies of increasing severity.

Committed Dose Equivalent - The dose equivalent to organs or tissues of reference that will be received from an intake of radioactive material by an individual during the 50-year period following the intake.

Corrective Actions - Those emergency measures taken to ameliorate or terminate an emergency situation at or near its source.

County Emergency Operations Center - Each of the four (4) counties (Westchester, Rockland, Putnam and Orange) surrounding the site has an Emergency Operations Center from which the County officials evaluate and coordinate all County activities during an emergency.

Dose Equivalent - The product of the absorbed dose in tissue, quality factor, and all other necessary modifying factors at the location of interest. The unit of dose equivalent is the Rem.

Dose Projection - The calculated estimate of a radiation dose to individuals at a given location (normally off-site), determined from the source term/quantity of radioactive material (Q) released, and the appropriate meteorological dispersion parameters (X/Q).

Drill - A supervised instruction period aimed at testing, developing and maintaining skill in a particular operation.

Emergency Action Level (EAL) - A predetermined, site-specific, observable threshold for a plant Initiating Condition that places the plant in a given emergency class.

Emergency Alert System (EAS) - A network of broadcast stations and interconnecting facilities which have been authorized by the Federal Communications Commission to operate in a controlled manner during a war, state of public peril or disaster, or other national or local emergency. In the event of a nuclear reactor accident, state or local government authorities on the EAS would broadcast instructions/notifications to the public on conditions or protective actions.

Emergency Coordinator - A position title in NUREG 0654-Rev 1 corresponding to the Entergy position of Emergency Director.

Emergency Director - A previously designated and trained individual who assumes total responsibility for directing all licensee activities related to an emergency at the site. The Emergency Director is the interface between the Onsite Emergency Organization and all offsite agencies.

Emergency Notification System (ENS) - The NRC Emergency Notification System is a dedicated telephone system (part of the Federal Telephone System). It connects the plant with NRC headquarters in Bethesda, Maryland. It is used for reporting emergency conditions to NRC personnel.

Emergency Operations Facility - The facility for evaluating and coordinating all of Entergy activities related to an emergency.

Emergency Plan Administrative Procedures – Procedures that provide detailed information necessary to maintain the Emergency Planning Program. Primarily used by members of the Emergency Planning Staff.

Emergency Plan Implementing Procedures – Procedures that provide detailed information necessary to implement required tasks during an emergency. Primarily used by members of the Emergency Response Organization.

Emergency Planning Manager - Individual responsible for reviewing and updating the emergency plan and supporting documents and coordinating all onsite and offsite emergency planning efforts.

Emergency Planning Zone (EPZ) - The area around the Indian Point Energy Center Site where planning is required for the plume exposure pathway, out to approximately 10-miles (10-mile EPZ). For the ingestion exposure pathway, the EPZ extends out to approximately 50-miles (50-mile EPZ). The 10-mile EPZ encompasses areas of Westchester, Rockland, Putnam and Orange Counties. The 50-mile EPZ includes the 10-mile EPZ and encompasses areas of Connecticut, New Jersey, Pennsylvania and New York.

Emergency Response Data System - ERDS is a direct near real-time electronic data link between the licensee's onsite computer system and the NRC Operations Center that provides for the automated transmission of a limited data set of selected parameters.

Essential Personnel - Those individuals needed to achieve the goals and tasks as deemed necessary by the Shift Manager, Emergency Director and/or Emergency Plant Manager during an emergency. Unless otherwise directed, initially all members of the Emergency Response Organization (ERO) are considered essential personnel.

Exclusion Area - The area surrounding the reactor in which the licensee has the authority to determine all activities including exclusion or removal of personnel and property from the area. (10CFR100)

Fission Product Barrier - The fuel cladding, reactor coolant system boundary, or the containment boundary.

Health Physics Network (HPN) - In the event of a site emergency, the NRC HPN line will be activated by the NRC Operations center in Bethesda, Maryland. This phone is part of a network that includes the NRC Regional Office and the NRC Operations Headquarters in Bethesda, Maryland. This system is dedicated for the transmittal of radiological information to the NRC Operations Headquarters in Bethesda, Maryland, and the NRC Regional Office. HPN phones are located in the TSC/OSC and EOF.

Indian Point Energy Center Site - The combined areas immediately surrounding Units 1, 2 and 3 that are owned and operated by Entergy.

Joint Information Center – Located outside the plume exposure emergency planning zone at the Hudson Valley Transportation Management Center, 200 Bradhurst Avenue, Hawthorne, NY. This facility provides for coordination of public information released to the news media and the public. It provides for a point-of-contact between Entergy and the news media.

New York Emergency Operations Center – New York State has principal Emergency Operations Centers in the Public Security Building, in Harriman State Office Campus in Albany, New York and at the Hudson Valley Transportation Center in Hawthorne, New York.

Nuclear Facility Operator - The licensee (Entergy) who operates the nuclear power plants at the Indian Point Energy Center Site.

Offsite - Locations outside of the Indian Point Energy Center Site boundary.

Onsite - The area within the Indian Point Energy Center Site boundary.

Onsite Emergency Organization - The Indian Point Energy Center organization that has the capability to provide initial response to emergency situations

Operational – Status of an emergency facility declared by the appropriate facility manager upon determining that the facility is adequately staffed and equipment is setup and available to perform the emergency functions assigned to that facility.

Operations Support Center - Located on the 53' elevation adjacent to the Technical Support Center, it houses all Operations, Instrument and Control, Maintenance, Chemistry and Radiation Protection personnel awaiting assignment by the Shift Manager/Plant Operations Manager. (NUREG 0654)

Plant Emergency Operating Procedures - Procedures located under separate cover from the Emergency Implementing Procedures that specify actions required to be performed by control room personnel to mitigate reactor coolant system or process system abnormalities.

Process Radiation Monitors - Radiation detectors which continuously monitor operating plant systems or specific effluent release points and provide the Control Room with remote monitoring capabilities and in some cases provide initiation of automatic termination of a specific effluent release.

Protective Actions - Those actions taken during or after an emergency for the purpose of reducing or eliminating hazards, or preventing or minimizing radiological exposures to persons that would likely occur if the actions were not taken. Protective actions would be warranted provided the reduction in an individual dose expected to be achieved by carrying out the protective actions is not offset by excessive risks to individual safety in taking the protection action.

Protective Action Guide (PAG) - Projected radiological dose values to individuals in the general population who warrant protective action. Protective Action Guides contain criteria used to determine whether the general population needs protective action regarding projected radiological doses, or from actual committed (measured) dose values.

Protective Action Recommendations (PARs) - Recommended actions to the States and counties for the protection of the offsite public from whole body external gamma radiation, and inhalation and ingestion of radioactive materials. The State(s) assesses the PARs and may issue access control and other recommendations concerning the safeguards of affected food chain processes.

Protected Area - The area enclosed by the security fence immediately surrounding Units 1, 2 and 3 where access is restricted in accordance with the Security Plan.

Quarterly – Frequency of occurrence equal to once in each of the following periods: January 1st through March 31st, April 1st through June 30th, July 1st through September 30th, October 1st through December 31st.

Radiation Area - An area, accessible to individuals, in which radiation levels could result in an individual receiving a deep dose equivalent in excess of 5mRem (0.05 mSv) in one hour at 30 cm (~ 12 inches) from the radiation source or from any surface that the radiation penetrates.

Radiologically Controlled Area – Any area within plant buildings or on plant property where access is restricted and monitored for the purpose of radiation protection.

Radiological Emergency Communication System - Dedicated private line telephone system connecting the licensee with NY State and the four County Warning Points and Emergency Operations Centers, and other agencies.

Recovery Actions - Those actions taken after the emergency to restore the plant as nearly as possible to its pre-emergency condition.

Recovery Center - The location from which the Recovery Manager will control the overall recovery effort.

Shift Manager - Management person in charge of plant operations during each shift. This person initially takes charge of the emergency response effort until arrival of the management persons who will relieve them of the emergency duties of Plant Operations Manager and Emergency Director

Site Boundary - That line beyond which the land is neither owned, leased, nor otherwise controlled by the site licensee (Technical Specifications). The site boundary for the purposes of the Emergency Plan coincides with the "exclusion area" boundary shown in the FSAR. (FSAR, Figure 2.2-2)

For Dose Assessment and Protective Actions Recommendation purposes the Site Boundary is the closest distance at which members of the public would be exposed to a radioactive release. When the plume is traveling toward the water, the distance to the nearest point on the opposite side of Hudson River will be considered as the Site Boundary.

Site Evacuation – Process of removing non-essential personnel from the Owner Controlled Area.

Site Recovery Director - The individual who reports to senior management of the Company and who directs the Corporate Response Organization during the recovery stage. The Site Recovery Director is responsible for the technical direction and control of the integrated recovery effort.

Staffed – The emergency response facility has been activated and sufficient personnel are available to perform the required functions as determined by the facility manager.

Station - The three Entergy Nuclear Generating Units (1, 2 and 3) located on the Indian Point Energy Center Site, near Peekskill, NY.

Technical Support Center – Located on the 53' elevation adjacent to the Operations Support Center, it is used by technical, engineering and operations personnel in their support of the watch personnel handling the in-plant accident conditions (NUREG 0654)

Technical Support Center Manager - The individual who directs and coordinates the technical support activities.

Vital Area - Areas within the station security fence that contain vital equipment. Examples include Control Rooms, Containment and Electrical Equipment Rooms.

Warning Point - A location designated by a government agency for the purposes of receiving and promulgating warning information.

Watch - Positions covered by plant operating personnel on a 24-hour basis.

EVACUATION PLANS

I. INTRODUCTION

Evacuation planning is based on the identification of both the population to be evacuated and the transportation resources required to accomplish the task. These are the essential data around which the Evacuation Time Estimate (ETE) is built. Because the population in the areas to be evacuated can vary with the time of day, the day of the week, the seasons and other factors, a set of fifteen temporal scenarios has been developed for use in the ETE. These scenarios, prepared for both fair and adverse weather conditions, address variations in the general population, employee population, transient population and special facility (e.g., schools, nursing homes, and hospitals) population, as well as variations in roadway conditions. The fifteen evacuation scenarios are:

Scenario	Season	Day of Week	Time of Day	Weather	Special
1	Summer	Midweek	Midday	Good	None
2	Summer	Midweek	Midday	Rain	None
3	Summer	Weekend	Midday	Good	None
4	Summer	Weekend	Midday	Rain	None
5	Summer	Midweek, Weekend	Evening	Good	None
6	Winter	Midweek	Midday	Good	None
7	Winter	Midweek	Midday	Rain	None
8	Winter	Midweek	Midday	Snow	None
9	Winter	Weekend	Midday	Good	None
10	Winter	Weekend	Midday	Rain	None
11	Winter	Weekend	Midday	Snow	None
12	Winter	Midweek, Weekend	Evening	Good	None
13	Winter	Weekend	Midday	Good	West Point Football
14	Summer	Weekend	Midday	Good	Event at Croton Point Park
15	Summer	Midweek	Midday	Good	Roadway impact Rt. 6; Rt. 9W; Palisades Pkwy; Taconic Pkwy

The traffic demand and trip-generation rate of evacuating vehicles were estimated from the gathered data. Sources of data include the 2010 Census, New York agencies, county agencies, a telephone survey and special concern facilities. (See Section 3/Appendix E and

EVACUATION PLANS

Section 5/Appendix F of the ETE of the 2012 ETE Report (Indian Point Energy Center, Development of Evacuation Time Estimates, KLD Engineering PC, KLD TR-537, December 2012) for a complete discussion of traffic demand and trip generation time, respectively.)

Following federal guidelines, the Indian Point Energy Center (IPEC) Emergency Planning Zone (EPZ) is subdivided into 38 Protective Action Areas. The Protective Action Area definitions are provided in Section II. The Protective Action Areas have been designed so that each can be defined in terms of well-known community names or boundaries. These Protective Action Areas are then grouped to conform with circular areas or "keyhole" configurations (circles plus radial sectors) that define Evacuation Regions for the ETE study. The Evacuation Regions are defined in Appendix H of the 2012 ETE Report. Additional Regions were defined in the 2014 ETE Addendum (Indian Point Energy Center, Development of Evacuation Time Estimates, Addendum for Additional Regions (2-Mile Radius + Downwind to EPZ Boundary), KLD Engineering PC, KLD TR-557, October 17, 2014). For each Protective Action Area within the EPZ, primary evacuation routes have been identified. Descriptions of the Protective Action Areas and their associated evacuation routes are given in the county plan procedures and in Section 10 and Appendix L of the 2012 ETE Report. Listings and maps of reception centers for each Protective Action Area are also included in the county procedures and in Section 10 of the 2012 ETE Report.

As part of the public education program associated with the implementation of the County Radiological Emergency Response Plan (RERP), the general public will be provided with materials to enable identification of their residential locations within a given Protective Action Area, thus identifying the recommended evacuation route and reception center as well.

II. PROTECTIVE ACTION AREAS

The plume exposure EPZ for the IPEC has been subdivided into 38 discrete Protective Action Areas as shown in Figure 1. The 2010 US Census permanent resident population estimates for each of the Protective Action Areas are presented in the 2014 ETE Addendum and are provided in Table 1. The boundaries of the various Protective Action Areas are described by county in Tables 2 through 5.

III. EVACUATION TIME ESTIMATES

Evacuation time estimates by Region for each of the scenarios are presented in Section 7 of the 2012 ETE Report. Updated evacuation time estimates for 90% and 100% of the population within the Protective Action Areas included in the regions defined by the two-mile and five-mile rings and for the full EPZ are presented in the 2014 ETE Addendum and provided in Tables 6-A, 6-B and 6-C.

IV. DESCRIPTION OF THE EVACUATION PLAN

The evacuation plan comprises four major phases: mobilization, egress, maintenance and re-entry. As a Response Action, the first phase of evacuation--mobilization--may be initiated for an incident classified as an Alert, a Site Area Emergency or a General Emergency. The decision to proceed with the second phase of the plan--egress--will be made as the status of the incident is assessed. The final phases of the plan--maintenance and re-entry--are applicable only after an evacuation has occurred.

EVACUATION PLANS

TABLE 1

EPZ Permanent Population 2010 Census

Protective Action Area	Orange	Putnam	Rockland	Westchester
Briarcliff Manor				8,370
Central Town of Clarkstown			23,052	
Northeastern Town of Ramapo			25,941	
Northeastern & Eastern Town of Clarkstown			15,127	
Northwestern Town of Clarkstown			7,453	
Ossining				30,478
Village of Haverstraw			11,910	
Town of New Castle (west of Hardscrabble Road)				4,686
Village of West Haverstraw			10,376	
Unincorporated Areas of the Town of West Haverstraw			11,483	
Town of Tuxedo east of NYS Thruway	204			
Village of Pomona			4,520	
Grassy Point			142	
Croton-on-Hudson				8,078
Stony Point			13,111	
Verplanck				2,183
Tompkins Cove			1,797	
Buchanan				2,232
Montrose				2,593
Jones Point			125	
Village of Harriman east of NYS Thruway	0			
Peekskill				23,565
Cortlandt				26,565
Bear Mountain State Park	16		5	
Harriman State Park	6		9	

TABLE 1 (cont.)

EPZ Permanent Population
2010 Census[1]

Protective Action Area	Orange	Putnam	Rockland	Westchester
Yorktown				36,275
Somers (west of Route 118)				4,436
Fort Montgomery	1,837			
Southwest Carmel		2,597		
Village of Highland Falls	4,175			
Lower Phillipstown		2,581		
Village of Woodbury (east of NYS Thruway)	2,386			
West Point	6,464			
Southern Putnam Valley		10,171		
Town of Highlands	0			
Hudson River	Hudson River			
Town of Cornwall (south of Angola Road)	1,035			
Southern Phillipstown		4,569		
Total Population by County:	**16,123**	**19,918**	**125,051**	**149,461**
Total EPZ Population	**310,553**			

1. Indian Point Energy Center, Development of Evacuation Time Estimates, Addendum for Additional Regions (2-Mile Radius + Downwind to EPZ Boundary), KLD Engineering P.C, KLD TR-557, Section 2, October 17, 2014

Table 2. Orange County Protective Action Area Descriptions

Protective Action Area	Description
Town of Tuxedo east of NYS Thruway	The Town of Tuxedo east of the NYS Thruway from the Rockland County line to the Town of Woodbury town line (not in Harriman State Park).
Village of Harriman east of NYS Thruway	Village of Harriman east of NYS Thruway.
Fort Montgomery	The Hamlet of Fort Montgomery.
Village of Highland Falls	Village of Highland Falls.
Village of Woodbury east of NYS Thruway	The Village of Woodbury east of the NYS Thruway from the Town of Tuxedo to the Town of Cornwall.
West Point	The United States Military Academy (West Point)
Town of Highlands	The Town of Highlands excluding the Village of Highland Falls and the Hamlet of Fort Montgomery.
Town of Cornwall (south of Angola Road)	The Town of Cornwall from the Woodbury Town Line east of Route 32 and south of Angola Rd to Route 9W west of Route 9W to the Town of Highlands town line.
Bear Mountain State Park	The portion of Bear Mountain State Park in Orange County.
Harriman State Park	The portion of Harriman State Park in Orange County.

Table 3. Putnam County Protective Action Area Descriptions

Protective Action Area	Description
Southwest Carmel	The southwestern corner of the Town of Carmel; that is, the portion south of Lake Secor Road (County Route 30), and west of State Route 6N, including the area known as Secor.
Lower Phillipstown	The most southern part of the Town of Phillipstown; that is, south of Canopus Hollow Road; Old West Point Road east, east of US Route Canopus Hollow Road; Old West Point Road east, east of US Route 9, south of State Route 403, Lower Station Road and a short line from Lower Station Road as it nears the river to the boat basin just south of Garrison. This part includes the area known as Continental Village.
Southern Putnam Valley	The southern portion of the Town of Putnam Valley; that is, the portion south of Clarence Fahnestock Memorial State Park and west of Sunken Mine Road, south of Northshore Road, west of Lake Road (County Route 20), south of Tinker Hill Road, Peekskill Hollow Road, Bryant Pond Road and Lake Secor Road. This portion includes the areas known as Gilbert Corners, Sunnybrook, Oscawana Corners, Crofts Corners, Adams Corners, and Lake Peekskill.
Southern Phillipstown	The southern half of Phillipstown, not including the area defined as Lower Phillipstown; that is, the Village of Garrison and the Village of Nelsonville except for the portion of Hudson Highlands State Park, and the portion of Phillipstown south of Moffett Road, Lane Gate Road, Old Albany Post Road, Indian Brook Road and south of Clarence Fahnestock Memorial State Park, and including the areas known as Nelson Corners, Garrison, Travis Corners, South Highland, Four Corners, and Forsonville.

Table 4. Rockland County Protective Action Area Descriptions

Protective Action Area	Description
Central Town of Clarkstown	Central part of the Town of Clarkstown, bounded on the south by (west to east) West Clarkstown Road, a short segment of the Palisades Interstate Parkway (PIP), Church Road, Germonds Road, Parrott Road McCarthy Way, a short segment of Strawtown Road, and Hillcrest Road; on the east by the western edge of DeForest Lake; on the north by (east to west) Congers Road, Goebel Road northward, State Route 304, Squadron Boulevard, Main Street northward, West Phillips Hill Road, Old Phillips Hill Road, Buena Vista Road northward, and Conklin Road; and an eastern portion of the Town of Ramapo, east of the PIP and south of Conklin Road and a short section of State Route 45 connecting Conklin Road to the PIP.
Northeastern Town of Ramapo	The Town of Ramapo west of the Palisades Interstate Parkway and north of Viola and Eckerson Roads, including the Villages of Wesley Hills, New Hempstead and New Square and the Hamlet of Hillcrest.
Northeastern & Eastern Town of Clarkstown	Northeastern and Eastern-central parts of the Town of Clarkstown, excepting High Tor State Park, bounded on the south by Crusher and Christian Herald Roads and Nyack Beach State Park and on the west by Lake Deforest, including the Hamlets of Congers and Valley Cottage and Rockland Lake and Hook Mountain State Parks.
Northwestern Town of Clarkstown	Northwestern part of the Town of Clarkstown, excepting High Tor State Park, bounded on the east by the western boundary of Lake De Forest, and on the south by (east to west) Congers Road, Goebel Road northward, State Route 304, Squadron Boulevard, Main Street northward, West Phillips Hill Road, Old Phillips Hill Road, Buena Vista Road northward, and Conklin Road; and the northeastern part of the Town of Ramapo, bounded on the west by the Palisades Interstate Parkway, and on the south by Conklin Road and a short section of State Route 45.
Village of Haverstraw	In the Town of Haverstraw, the Village of Haverstraw.
Village of West Haverstraw	In the Town of Haverstraw, the Village of West Haverstraw.
Unincorporated Areas of the Town of Haverstraw	The unincorporated areas of the Town of Haverstraw including the Hamlets of Thiells and Mount Ivy.

Table 4 Rockland County Protective Action Area Descriptions (continued)

Protective Action Area	Description
Village of Pomona	In the Towns of Haverstraw and Ramapo, the Village of Pomona and the unincorporated portions of the Hamlet of Pomona.
Grassy Point	Grassy Point east of the Penny Bridge, Minisceongo Yacht Club, Haverstraw Marina, Haverstraw Bay County Park, Bowline Park.
Stony Point	The Town of Stony Point east of Bear Mountain and Harriman State Parks, south of Tompkins Cove and west of Grassy Point.
Tompkins Cove	Tompkins Cove zip code area.
Jones Point	Eastern part of Bear Mountain State Park and the Jones Point and Dunderberg areas, south of Salisbury Meadow and Ring Meadow and east of U.S. Route 9W/202, and including the non-park areas east and south of Dunderberg Mountain, north of the main southern boundary of Bear Mountain State Park.
Bear Mountain State Park	The eastern part of Harriman State Park and Bear Mountain State Park, bounded on the west and north by the Palisades Interstate Parkway northbound and U.S. Route 6 to the Bear Mountain Bridge, and south of Salisbury Meadow and Ring Meadow, on the east by U.S. Route 9W/202 and the Park boundary, where the boundary is west of Route 9W/202.
Harriman State Park	The central and western parts of Harriman State Park bounded on the east by the Palisades Interstate Parkway (PIP) northbound and a line connecting PIP/US. Route 6 to the West Point Military Reservation boundary where they are very close, about 1 1/2 miles W of the Bear Mountain Bridge; on the south by the Ramapo/Haverstraw Town Line and the Rockland/Orange County Line southwestward; and on the west by the New York State Thruway (Interstate Route 87/287, not included in the EPZ) and the NW/SE running utility right-of-way crossing Smith Rock and Pound Mountain.

Table 5. Westchester County Protective Action Area Descriptions

Protective Action Area	Description
Briarcliff Manor	The Village of Briarcliff Manor.
Ossining	The Town and Village of Ossining.
Town of New Castle (west of Hardscrabble Rd)	The Town of New Castle west of Hardscrabble Road.
Croton-on-Hudson	The Village of Croton-on-Hudson.
Verplanck	The Hamlet of Verplanck.
Buchanan	The Village of Buchanan.
Montrose	The Hamlet of Montrose.
Peekskill	The City of Peekskill.
Cortlandt	The Town of Cortlandt excluding the Hamlets of Verplanck and Montrose, and the Villages of Buchanan and Croton-on-Hudson; including Camp Smith and the FDR VA Hospital.
Yorktown	The Town of Yorktown.
Somers (west of Route 118)	The Town of Somers west of State Route 118/Tomahawk Street.

Table 6-A. Evacuation Time Estimates for the 2-Mile Region, 5-Mile Region and Full EPZ – Summer Scenarios

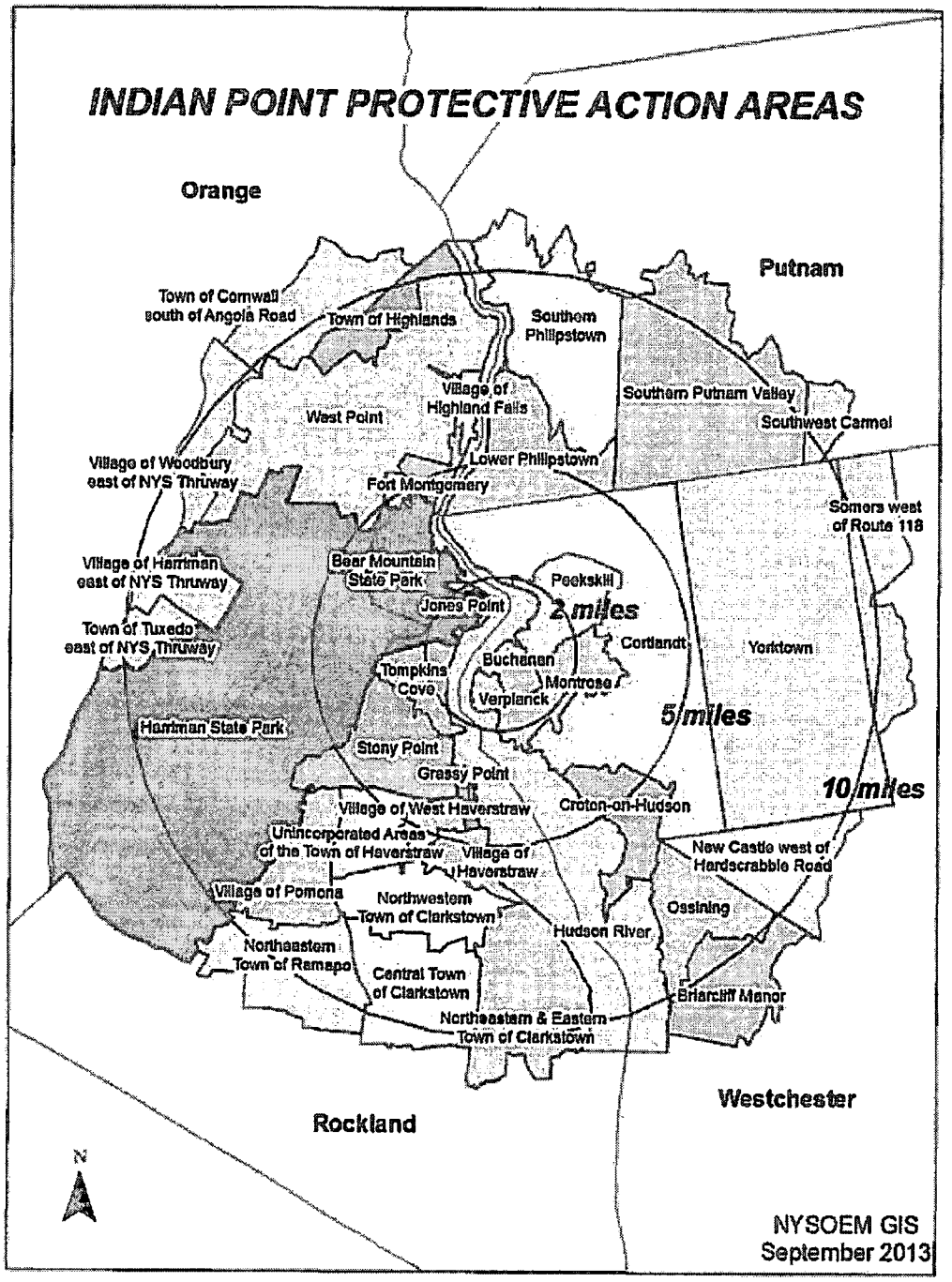
	Summer									
	Midweek				Weekend				Midweek, Weekend	
Scenario:	1		2		3		4		5	
Region	Midday				Midday				Evening	
	Good Weather		Rain		Good Weather		Rain		Good Weather	
	90%	100%	90%	100%	90%	100%	90%	100%	90%	100%
R1 (2 Mile)	2:25	5:20	2:25	5:20	2:10	5:15	2:15	5:15	2:10	5:15
R2 (5 Mile)	3:05	5:20	3:20	5:20	3:10	5:20	3:20	5:20	2:40	5:20
R3 (Full EPZ)	3:55	6:55	4:10	7:10	3:35	6:10	3:45	6:10	3:15	5:55

Table 6-B. Evacuation Time Estimates for the 2-Mile Region, 5-Mile Region and Full EPZ – Winter Scenarios

	Winter													
	Midweek						Weekend						Midweek, Weekend	
Scenario:	6		7		8		9		10		11		12	
Region	Midday						Midday						Evening	
	Good Weather		Rain		Snow		Good Weather		Rain		Snow		Good Weather	
	90%	100%	90%	100%	90%	100%	90%	100%	90%	100%	90%	100%	90%	100%
R1 (2 Mile)	2:25	5:20	2:25	5:20	3:15	6:20	2:10	5:15	2:10	5:15	3:00	6:15	2:10	5:15
R2 (5 Mile)	3:05	5:20	3:25	5:20	3:50	6:25	2:40	5:20	2:50	5:20	3:25	6:20	2:40	5:20
R3 (Full EPZ)	3:55	6:45	4:20	6:55	4:55	7:50	3:20	5:55	3:35	6:05	4:10	6:25	3:15	5:55

Table 6-C. Evacuation Time Estimates for the 2-Mile Region, 5-Mile Region and Full EPZ – Special Events

	Winter		Summer			
	Weekend		Weekend		Midweek	
Scenario:	13		14		15	
Region	Midday		Midday		Midday	
	Good Weather		Good Weather		Good Weather	
	West Point Football		Croton Point Park Event		Roadway Impact	
	90%	100%	90%	100%	90%	100%
R1 (2 Mile)	2:10	5:15	2:10	5:15	2:25	5:20
R2 (5 Mile)	2:45	5:20	3:05	5:20	3:05	5:20
R3 (Full EPZ)	3:30	5:55	3:35	6:10	4:40	7:00



EMERGENCY PLANNING PROTECTIVE ACTION AREAS