Catawba Nuclear Station
Attachment 1
Emergency Plan Revision 19-03
10CFR 50.54(q) Evaluation and screen

DUKE ENERGY

Duke Energy

ACTION REQUEST - 02261006

Action Request Details

Type : EREG **Orig Date** : 03/05/2019 15:53 **Discovery Date** :
Subject : EPA P rev 149
Description
CONTACT SITE EP SUPERVISOR FOR ASSISTANCE IN PREPARING EP01, EP02, AND EP03. ENSURE EREG IS CROSS-REFERENCED TO THE REG AR WHICH INITIATED IT. Perform 50.54(q) screen and evaluation if required EPA P rev 149
Notes

Priority :
Severity :
Report To :
Due Date : 04/06/2019
Status : APPROVED 03/05/2019
Event Date :

Originator : I44004
Facility : CN
Originator Group :
Department : 13650
Organization :

Owed To :
Owed To Fac : CN
Owed To Group : QUALREVW
Department : 13650
Discipline :

Action Request Status History

Updated Date	Updated By	AR Status	AR Due Date
03/05/2019	I44004	INPROG	03/07/2019
03/05/2019	I44004	APPROVED	
03/07/2019	I44004		04/06/2019

Action Request Attributes

Request Attribute	Values	Reqd	Date
BOUNDED EREG AR	N	Y	03/05/2019
Name : STACI N WHITE			

Request Attribute	Values	Reqd	Date
EREG AR CROSS XREF	N	Y	03/05/2019
Name : STACI N WHITE			

Request Attribute	Values	Reqd	Date
REG AR CROSS XREF	N	Y	03/05/2019
Name : STACI N WHITE			

DUKE ENERGY

Duke Energy

ACTION REQUEST - 02261006

Action Request Notes

Action Request Routing/Return Comments

Routing Comments from the X601 Panel

*** No Routing Comments Found ***

Updated On | Updated By

Routing Comments from the X602 Panel

*** No Return Comments Found ***

Updated On | Updated By

Action Request Approval Review

Route List : 001

Route List Initiator :

Passport	Fac	Group / Type	Send Date	Send Time	Action Taken	Action Date / Time	Last Name

Action Request Trend/Cause

Action Request Keywords

Keyword	Keyword Description

Action Request Reference Documents

Facility	Doc Type	Sub Type	Document	Sheet	Rev	Minor Rev	Title
CN	AR		02258326		000		CNS Emergency Plan Sections E, G, N, P

Action Request Reference Equipment

Facility	Unit	System	Equip Type	Equip Number	Equip Tag	Equip Status	Rev	Rev Status

DUKE ENERGY

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ACTION REQUEST - 02261006

Action Request Cross References

Ref Type	Ref Nbr	Ref Sub	Ref Nbr Type	Status	Limit AR Cls	Description
AR	02239903		DRR	APPROVED	N	EPA E Rev 149
AR	02239916		DRR	APPROVED	N	EPA G Rev 162
AR	02247170		DRR	APPROVED	N	EPA N rev. 150
AR	02247174		DRR	APPROVED	N	EPA P rev 148
AR	02258318		5AD	COMP-NA	N	EPA Section e
AR	02258320		5AD	COMP-NA	N	E Plan Section G
AR	02258323		5AD	COMP-NA	N	EPA N - 0021005149 CNS EMERGENCY PLAN SECTION N - EXERCISES
AR	02258324		5AD	COMP-NA	N	EPA P - 0021005285 CNS EMERGENCY PLAN SECTION P -
AR	02260904		DRR	COMPLETE	N	EPA P rev. 149
AS	02187203	1900	GNRL	COMPLETE	N	EP Excellence Plan - Action SD-EP-4.2
AS	02194997	0200	PI	COMPLETE	N	Revise AD-EP-ALL-0602 to improve templates to focus on why a

Action Request Assignment Details

ASSIGNMENT NUMBER : 01 **SUB** :

Type	: EP01	**Due Date**	: 03/07/2019	**Pri Resp Fac**	:
Status	: COMPLETE	**Reschedule**	:	**Pri Resp Group**	:
Assigned To	: STACI N WHITE			**Sec Resp Fac**	:
Subject	: 50.54(Q) SCREEN			**Sec Resp Group**	:
Aff Facility	: CN	**Unit**	:	**System**	:
UCR	:	**Schedule Ref**	:		
Organization	:	**Department**	: 13650	**Discipline**	:
Est Manhrs	:	**Ext Comp Date**	:		

Description

COMPLETE 50.54(Q) SCREEN IN ACCORDANCE WITH AD-EP-ALL-0602.

Action Request Assignment Completion Notes

I approve 50.54Q screen for EPA P rev 149.

DUKE ENERGY

Duke Energy

ACTION REQUEST - 02261006

Action Request Assignment Status History

Updated Date	Updated By	Assgn Status	Assgn Due Date
03/05/2019	I44004	INPROG	
03/05/2019	I44004		03/07/2019
03/05/2019	I44004	ACC/ASG	
03/06/2019	I44004	AWAIT/C	
03/10/2019	MEHARE	COMPLETE	

Action Request Assignment Attributes

Action Request Assignment Routing/Return Comments

Routing Comments from the X601 Panel — Updated On — Updated By

*** No Routing Comments Found ***

Routing Comments from the X602 Panel — Updated On — Updated By

*** No Return Comments Found ***

Action Request Assignment Completion Approval

Route List : 001 — Route List Initiator : I44004

Passport	Fac	Group /	Type	Send Date	Send Time	Action Taken	Action Date / Time	Last Name
DMBRUNS			A	03/06/2019	12:55	APPROVED	03/07/2019 10:40	BRUNSON
MEHARE			A	03/07/2019	10:40	APPROVED	03/10/2019 15:58	HARE

Action Request Assignment Cause/Action

Action Request Assignment Reference Documents

Facility	Doc Type	Sub Type	Document	Sheet	Rev	Minor Rev	Title

Duke Energy

ACTION REQUEST - 02261006

Action Request Assignment Reference Equipment

Facility	Unit	System	Equip Type	Equip Number	Equip Tag	Equip Status	Rev	Rev Status

Action Request Assignment Cross References

Ref Type	Ref Nbr	Ref Sub	Ref Nbr Type	Status	Limit AS Cls	Description

Action Request Assignment Appendices

APPENDIX 1

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Screening and Evaluation Number	Applicable Sites	
EREG #: 02261006	BNP	☐
	CNS	X
	CR3	☐
	HNP	☐
5AD #: 02258324	MNS	☐
	ONS	☐
	RNP	☐
	GO	☐

Document and Revision

Emergency Plan Section P, Rev 149 (DRR 02260904)

Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):

Change all instances of "Emergency Planning Manager" or "Emergency Preparedness Manager" to "Manager, Nuclear Support Services."

Part II. Activity Previously Reviewed?

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 or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below:

Justification:

Yes	☐	No	X
10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.		Continue to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part III	

Bounding document attached (optional) ☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Part III. Editorial Change Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? Justification: This is an editorial change per AD-EP-ALL-0602, section 3.0.6.d: "Correct titles of plant organizations, position titles or department/section/unit names where no change in the authority, responsibility, or reporting relationships." Due to Duke Energy reorganization, the Emergency Planning/Preparedness Manager is now the Manager, Nuclear Support Services. The position is responsible for Emergency Preparedness, as delegated from the Site Vice President.	Yes X 10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V.	No ☐ Continue to Attachment 4, Part IV and address non editorial changes

Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria)

Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.

1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)	
1a	Responsibility for emergency response is assigned.	☐
1b	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.	☐
2	10 CFR 50.47(b)(2) Onsite Emergency Organization	
2a	Process ensures that onshift emergency response responsibilities are staffed and assigned	☐
2b	The process for timely augmentation of onshift staff is established and maintained.	☐
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources	
3a	Arrangements for requesting and using off site assistance have been made.	☐
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan. (NA for CR3)	☐
4	10 CFR 50.47(b)(4) Emergency Classification System	
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)	☐
5	10 CFR 50.47(b)(5) Notification Methods and Procedures	
5a	Procedures for notification of State and local governmental agencies are capable of alerting them of the declared emergency within 15 minutes (60 minutes for CR3) after declaration of an emergency and providing follow-up notification.	☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. (NA for CR3)	☐
5c	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. (NA for CR3)	☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Part IV. Emergency Planning Element and Function Screen (cont.)		
6	10 CFR 50.47(b)(6) Emergency Communications	
6a	Systems are established for prompt communication among principal emergency response organizations.	☐
6b	Systems are established for prompt communication to emergency response personnel.	☐
7	10 CFR 50.47(b)(7) Public Education and Information	
7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). (NA for CR3)	☐
7b	Coordinated dissemination of public information during emergencies is established.	☐
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	☐
8b	Adequate equipment is maintained to support emergency response.	☐
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	☐
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies. (NA for CR3)	☐
10b	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. (NA for CR3)	☐
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	☐
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	☐
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	☐
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	☐
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	☐
14	10 CFR 50.47(b)(14) Drills and Exercises	
14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	☐
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	☐
14c	Identified weaknesses are corrected.	☐
15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	☐
16b	Planners responsible for emergency plan development and maintenance are properly trained.	☐
PART IV. Conclusion If no Part IV criteria are checked, then provide Justification and complete Part V below. Justification:		☐
If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Program Element 4a requires final approval of Screen and Evaluation by EP CFAM.		☐

Part V. Signatures: EP CFAM Final Approval is required for changes affecting Program Element 4a. If CFAM approval is **NOT** required, then mark the EP CFAM signature block as not applicable (N/A) to indicate that signature is not required.		
Preparer Name (Print): Staci White	Preparer Signature: See CAS	Date: See CAS
Reviewer Name (Print): Douglas Brunson	Reviewer Signature: See CAS	Date: See CAS
Approver (EP Manager Name (Print): Mandy Hare	Approver Signature: See CAS	Date: See CAS
Approver (EP CFAM, as required) Name (Print) N/A	Approver Signature: N/A	Date: N/A

QA RECORD

DUKE ENERGY

Duke Energy

ACTION REQUEST - 02261006

Action Request Assignment Details

ASSIGNMENT NUMBER : 02 **SUB** :

Type	: GNRL	**Due Date**	: 04/06/2019	**Pri Resp Fac**	:
Status	: ACC/ASG	**Reschedule**	:	**Pri Resp Group**	:
Assigned To	: DOUGLAS M BRUNSON			**Sec Resp Fac**	:
Subject	: LICENSING SUBMIT 50.54(Q) TO NRC WITHIN 30 DAYS OF CHANGE			**Sec Resp Group**	:
Aff Facility	: CN	**Unit**	:	**System**	:
UCR	:	**Schedule Ref**	:		
Organization	:	**Department**	: 10410	**Discipline**	:
Est Manhrs	:	**Ext Comp Date**	:		

Description

LICENSING SUBMIT 50.54(Q) WITHIN 30 DAYS OF CHANGE

Action Request Assignment Completion Notes

Action Request Assignment Status History

Updated Date	Updated By	Assgn Status	Assgn Due Date
03/07/2019	I44004	INPROG	04/06/2019
03/07/2019	I44004	NTFY/ASG	
03/07/2019	DMBRUNS	ACC/ASG	

Action Request Assignment Attributes

Request Attribute	Values	Reqd	Date
1A COMMITTED Name :		N	

Request Attribute	Values	Reqd	Date
1B CHANGE BASIS Name :		N	

Request Attribute	Values	Reqd	Date
2A COMMENTS		N	
Name :			

Request Attribute	Values	Reqd	Date
BENEFIT REALIZED		N	
Name :			

Request Attribute	Values	Reqd	Date
FINAL ISSUE		N	
Name :			

Request Attribute	Values	Reqd	Date
IMPORTANT TO NRC		N	
Name :			

Request Attribute	Values	Reqd	Date
IT LABOR ESTIMATE		N	
Name :			

Request Attribute	Values	Reqd	Date
LTAM ISSUE ID		N	
Name :			

Request Attribute	Values	Reqd	Date
PHC DUE DATE		N	
Name :			

Request Attribute	Values	Reqd	Date
PLANT HEALTH ISSUE ?		N	
Name :			

Request Attribute	Values	Reqd	Date
RTTQ		N	
Name :			

DUKE ENERGY

Duke Energy

ACTION REQUEST - 02261006

Request Attribute	Values	Reqd	Date
T+1 CRITIQUE Name :		N	

Request Attribute	Values	Reqd	Date
WBS Name :		N	

Action Request Assignment Routing/Return Comments

Routing Comments from the X601 Panel

	Updated On	Updated By
*** No Routing Comments Found ***		

Routing Comments from the X602 Panel

	Updated On	Updated By
*** No Return Comments Found ***		

Action Request Assignment Completion Approval

Action Request Assignment Cause/Action

Action Request Assignment Reference Documents

Facility	Doc Type	Sub Type	Document	Sheet	Rev	Minor Rev	Title

Action Request Assignment Reference Equipment

Facility	Unit	System	Equip Type	Equip Number	Equip Tag	Equip Status	Rev	Rev Status

DUKE ENERGY

Duke Energy

ACTION REQUEST - 02261006

Action Request Assignment Cross References

Ref Type	Ref Nbr	Ref Sub	Ref Nbr Type	Status	Limit AS Cls	Description

Action Request Assignment Appendices

Action Request Assignment Details

ASSIGNMENT NUMBER : 03 SUB :

Type	: GNRL	Due Date	: 03/14/2019	Pri Resp Fac	:
Status	: ACC/ASG	Reschedule	:	Pri Resp Group	:
Assigned To	: STACI N WHITE			Sec Resp Fac	:
Subject	: PROVIDE 50.54(Q) INFO TO LICENSING FOR NRC 30 DAY SUBMITTAL			Sec Resp Group	:
Aff Facility	: CN	Unit	:	System	:
UCR	:	Schedule Ref	:		
Organization	:	Department	: 13650	Discipline	:
Est Manhrs	:	Ext Comp Date	:		

Description

PROVIDE 50.54(Q) INFO TO LICNESING FOR NRC 30 DAY SUBMITTAL

Action Request Assignment Completion Notes

Action Request Assignment Status History

Updated Date	Updated By	Assgn Status	Assgn Due Date
03/07/2019	I44004	INPROG	03/14/2019
03/07/2019	I44004	ACC/ASG	

DUKE ENERGY

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ACTION REQUEST - 02261006

Action Request Assignment Attributes

Request Attribute	Values	Reqd	Date
1A COMMITTED Name :		N	

Request Attribute	Values	Reqd	Date
1B CHANGE BASIS Name :		N	

Request Attribute	Values	Reqd	Date
2A COMMENTS Name :		N	

Request Attribute	Values	Reqd	Date
BENEFIT REALIZED Name :		N	

Request Attribute	Values	Reqd	Date
FINAL ISSUE Name :		N	

Request Attribute	Values	Reqd	Date
IMPORTANT TO NRC Name :		N	

Request Attribute	Values	Reqd	Date
IT LABOR ESTIMATE Name :		N	

Request Attribute	Values	Reqd	Date
LTAM ISSUE ID Name :		N	

Request Attribute	Values	Reqd	Date
PHC DUE DATE Name :		N	

Request Attribute	Values	Reqd	Date
PLANT HEALTH ISSUE ? Name :		N	

Request Attribute	Values	Reqd	Date
RTTQ Name :		N	

Request Attribute	Values	Reqd	Date
T+1 CRITIQUE Name :		N	

Request Attribute	Values	Reqd	Date
WBS Name :		N	

Action Request Assignment Routing/Return Comments

Routing Comments from the X601 Panel	Updated On	Updated By
*** No Routing Comments Found ***		

Routing Comments from the X602 Panel	Updated On	Updated By
*** No Return Comments Found ***		

Action Request Assignment Completion Approval

Action Request Assignment Cause/Action

DUKE ENERGY

Duke Energy

ACTION REQUEST - 02261006

Action Request Assignment Reference Documents

Facility	Doc Type	Sub Type	Document	Sheet	Rev	Minor Rev	Title

Action Request Assignment Reference Equipment

Facility	Unit	System	Equip Type	Equip Number	Equip Tag	Equip Status	Rev	Rev Status

Action Request Assignment Cross References

Ref Type	Ref Nbr	Ref Sub	Ref Nbr Type	Status	Limit AS Cls	Description

Action Request Assignment Appendices

END OF REPORT

Duke Energy

ACTION REQUEST - 02260849

Action Request Details

Type : EREG **Orig Date** : 03/05/2019 09:18 **Discovery Date** :
Subject : EPA Q REV 152
Description
CONTACT SITE EP SUPERVISOR FOR ASSISTANCE IN PREPARING EP01, EP02, AND EP03. ENSURE EREG IS CROSS-REFERENCED TO THE REG AR WHICH INITIATED IT. EPA Q REV 152
Notes

Priority :
Severity :
Report To :
Due Date : 04/06/2019
Status : APPROVED 03/05/2019
Event Date :

Originator : I44004
Facility : CN
Originator Group :
Department : 13650
Organization :

Owed To :
Owed To Fac : CN
Owed To Group : QUALREVW
Department :
Discipline :

Action Request Status History

Updated Date	Updated By	AR Status	AR Due Date
03/05/2019	I44004	INPROG	03/07/2019
03/05/2019	I44004	APPROVED	
03/07/2019	I44004		04/06/2019

Action Request Attributes

Request Attribute	Values	Reqd	Date
BOUNDED EREG AR	N	Y	03/07/2019
Name : STACI N WHITE			

Request Attribute	Values	Reqd	Date
EREG AR CROSS XREF	N	Y	03/07/2019
Name : STACI N WHITE			

Request Attribute	Values	Reqd	Date
REG AR CROSS XREF	N	Y	03/07/2019
Name : STACI N WHITE			

DUKE ENERGY

Duke Energy

ACTION REQUEST - 02260849

Action Request Notes

Action Request Routing/Return Comments

Routing Comments from the X601 Panel

*** No Routing Comments Found ***

Updated On | Updated By

Routing Comments from the X602 Panel

*** No Return Comments Found ***

Updated On | Updated By

Action Request Approval Review

Route List : 001

Route List Initiator :

Passport	Fac	Group / Type	Send Date	Send Time	Action Taken	Action Date / Time	Last Name

Action Request Trend/Cause

Action Request Keywords

Keyword	Keyword Description

Action Request Reference Documents

Facility	Doc Type	Sub Type	Document	Sheet	Rev	Minor Rev	Title

Action Request Reference Equipment

Facility	Unit	System	Equip Type	Equip Number	Equip Tag	Equip Status	Rev	Rev Status

DUKE ENERGY

Duke Energy

ACTION REQUEST - 02260849

Action Request Cross References

Ref Type	Ref Nbr	Ref Sub	Ref Nbr Type	Status	Limit AR Cls	Description
AR	01966999		EREG	COMPLETE	N	Emergency Plan Section H Revision 15-2
AR	02241894		DRR	APPROVED	N	EPA Q rev 152
AR	02260848		5AD	COMP-NA	N	EPA Q rev 152
AS	02187203	1900	GNRL	COMPLETE	N	EP Excellence Plan - Action SD-EP-4.2
AS	02194997	0200	PI	COMPLETE	N	Revise AD-EP-ALL-0602 to improve templates to focus on why a

Action Request Assignment Details

ASSIGNMENT NUMBER : 01 **SUB** :

Type	: EP01	**Due Date**	: 03/07/2019	**Pri Resp Fac**	:
Status	: COMPLETE	**Reschedule**	:	**Pri Resp Group**	:
Assigned To	: STACI N WHITE			**Sec Resp Fac**	:
Subject	: 50.54(Q) SCREEN			**Sec Resp Group**	:
Aff Facility	: CN	**Unit**	:	**System**	:
UCR	:	**Schedule Ref**	:		
Organization	:	**Department**	: 13650	**Discipline**	:
Est Manhrs	:	**Ext Comp Date**	:		

Description

COMPLETE 50.54(Q) SCREEN IN ACCORDANCE WITH AD-EP-ALL-0602.

Action Request Assignment Completion Notes

I approve the 50.54Q for EPA Q Rev 152.

Action Request Assignment Status History

Updated Date	Updated By	Assgn Status	Assgn Due Date
03/05/2019	I44004	INPROG	
03/05/2019	I44004		03/07/2019
03/05/2019	I44004	NTFY/ASG	
03/05/2019	I44004	ACC/ASG	

DUKE ENERGY

Duke Energy

ACTION REQUEST - 02260849

03/06/2019	I44004	AWAIT/C
03/08/2019	DMBRUNS	ACC/ASG
03/11/2019	I44004	AWAIT/C
03/11/2019	MEHARE	COMPLETE

Action Request Assignment Attributes

Action Request Assignment Routing/Return Comments

Routing Comments from the X601 Panel

Returned due to a difference in opinion on how to address the change.

Updated On	Updated By
20190308	DMBRUNS

Routing Comments from the X602 Panel

*** No Return Comments Found ***

Updated On	Updated By

Action Request Assignment Completion Approval

Route List : 001

Route List Initiator : I44004

Passport	Fac	Group	/	Type	Send Date	Send Time	Action Taken	Action Date	/	Time	Last Name
DMBRUNS				A	03/06/2019	12:44	RETURNED	03/08/2019		14:58	BRUNSON
MEHARE				A	03/11/2019	08:02	APPROVED	03/11/2019		09:29	HARE
DMBRUNS				A	03/11/2019	06:37	APPROVED	03/11/2019		08:02	BRUNSON

Action Request Assignment Cause/Action

Action Request Assignment Reference Documents

Facility	Doc Type	Sub Type	Document	Sheet	Rev	Minor Rev	Title

Action Request Assignment Reference Equipment

Facility	Unit	System	Equip Type	Equip Number	Equip Tag	Equip Status	Rev	Rev Status

Duke Energy

ACTION REQUEST - 02260849

Action Request Assignment Cross References

Ref Type	Ref Nbr	Ref Sub	Ref Nbr Type	Status	Limit AS Cls	Description

Action Request Assignment Appendices

APPENDIX 1

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Screening and Evaluation Number	Applicable Sites	
EREG #: 02260849	BNP	☐
	CNS	X
	CR3	☐
	HNP	☐
5AD #: 02260848	MNS	☐
	ONS	☐
	RNP	☐
	GO	☐

Document and Revision
CNS Emergency Plan Section Q, Revision 152 (DRR 02241894)

Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):

Appendix 5, Agreement Letters, page Q-5.2,
Remove the reference to Agreement Letter 18, "Carolinas Delivery Operations Departmental Interface Agreement - Describes the use of the Emergency Operations Facility by Carolinas Delivery Operations for emergency situations",
Replace with "deleted" as a placeholder in number 18 to maintain the numbering scheme of Agreement Letters 19 - 22.

Part II. Activity Previously Reviewed?	Yes ☐	No X
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 or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below: Justification:	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.	Continue to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part III

Bounding document attached (optional) ☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Part III. Editorial Change Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? Justification:	Yes ☐	No X
	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V.	Continue to Attachment 4, Part IV and address non editorial changes

Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria)

Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.

1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)	
1a	Responsibility for emergency response is assigned.	☐
1b	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.	☐
2	10 CFR 50.47(b)(2) Onsite Emergency Organization	
2a	Process ensures that onshift emergency response responsibilities are staffed and assigned	☐
2b	The process for timely augmentation of onshift staff is established and maintained.	☐
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources	
3a	Arrangements for requesting and using off site assistance have been made.	☐
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan. (NA for CR3)	☐
4	10 CFR 50.47(b)(4) Emergency Classification System	
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)	☐
5	10 CFR 50.47(b)(5) Notification Methods and Procedures	
5a	Procedures for notification of State and local governmental agencies are capable of alerting them of the declared emergency within 15 minutes (60 minutes for CR3) after declaration of an emergency and providing follow-up notification.	☐
5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. (NA for CR3)	☐
5c	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. (NA for CR3)	☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Part IV. Emergency Planning Element and Function Screen (cont.)		
6	10 CFR 50.47(b)(6) Emergency Communications	
6a	Systems are established for prompt communication among principal emergency response organizations.	☐
6b	Systems are established for prompt communication to emergency response personnel.	☐
7	10 CFR 50.47(b)(7) Public Education and Information	
7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). (NA for CR3)	☐
7b	Coordinated dissemination of public information during emergencies is established.	☐
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	☐
8b	Adequate equipment is maintained to support emergency response.	☐
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	☐
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies. (NA for CR3)	☐
10b	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. (NA for CR3)	☐
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	☐
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	☐
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	☐
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	☐
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	☐
14	10 CFR 50.47(b)(14) Drills and Exercises	
14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	☐
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	☐
14c	Identified weaknesses are corrected.	☐
15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	☐

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	☐
16b	Planners responsible for emergency plan development and maintenance are properly trained.	☐
PART IV. Conclusion If no Part IV criteria are checked, then provide Justification and complete Part V below. Justification: Agreement Letter 18 is IA-EP-DEC-0001, Carolinas Delivery Operations Departmental Interface Agreement, Rev 0.		X
IA-EP-DEC-0001 was deleted from Fusion on 10/31/2018 (DRR 1966205), with the following rationale: "With the relocation of the Nuclear Emergency Operations Facility (EOF) from the Energy Center Phase I first floor to the Energy Center Phase II third floor, nuclear no longer plans to allow Carolinas Delivery Operations to use the Nuclear EOF for emergency situations. Carolinas Delivery Operations now has their own Emergency Operations Center (EOC) in the Energy Center Phase I first floor (the former Nuclear EOF). This Interface Agreement is no longer needed and is being deleted." The change to relocate the EOF from the first floor of the Duke Energy Center to the third floor of the same building was evaluated by EREG 1966999. Because this document has been deleted and the reason for the document no longer exists, it will be removed from the CNS Emergency Plan.		
If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Program Element 4a requires final approval of Screen and Evaluation by EP CFAM.		☐

Part V. Signatures:

EP CFAM Final Approval is required for changes affecting Program Element 4a. If CFAM approval is **NOT** required, then mark the EP CFAM signature block as not applicable (N/A) to indicate that signature is not required.

Preparer Name (Print): Staci White	Preparer Signature: See CAS	Date: See CAS
Reviewer Name (Print): Douglas Brunson	Reviewer Signature: See CAS	Date: See CAS
Approver (EP Manager Name (Print): Mandy Hare	Approver Signature: See CAS	Date: See CAS
Approver (EP CFAM, as required) Name (Print): N/A, not an EAL Change	Approver Signature: NA	Date: N/A

<< 10 CFR 50.54(q) Screening Evaluation Form >>

QA RECORD

DUKE ENERGY.

Duke Energy

ACTION REQUEST - 02260849

Action Request Assignment Details

ASSIGNMENT NUMBER : 04 **SUB** :

Type	: GNRL	**Due Date**	: 03/14/2019	**Pri Resp Fac**	:
Status	: ACC/ASG	**Reschedule**	:	**Pri Resp Group**	:
Assigned To	: STACI N WHITE			**Sec Resp Fac**	:
Subject	: PROVIDE 50.54(Q) INFO TO LICENSING FOR NRC 30 DAY SUBMITTAL			**Sec Resp Group**	:
Aff Facility	: CN	**Unit**	:	**System**	:
UCR	:	**Schedule Ref**	:		
Organization	:	**Department**	: 13650	**Discipline**	:
Est Manhrs	:	**Ext Comp Date**	:		

Description

THE REGULATION AT 10 CFR 50.54(Q)(5) REQUIRES THE LICENSEE TO SUBMIT, AS SPECIFIED IN 10 CFR 50.4(B)(5)(II), A REPORT OF EACH CHANGE TO THE EMERGENCY PLAN MADE WITHOUT PRIOR NRC APPROVAL, INCLUDING A SUMMARY OF ITS ANALYSIS, WITHIN 30 DAYS AFTER THE CHANGE IS PUT IN EFFECT. THE NRC HAS STATED THAT THE SUMMARY REPORT OR A FULL COPY OF THE COMPLETED 50.54(Q) MAY BE SUBMITTED TO SATISFY THIS REQUIREMENT. SUBMIT TO LICENSING, A SUMMARY, AS DESCRIBED IN AD-EP-ALL- 0602, OR THE FULL 50.54(Q) REVIEWING ALL CHANGES TO THE EMERGENCY PLAN MADE WITHOUT PRIOR NRC APPROVAL FOR SUBMITTAL TO THE NRC'S DOCUMENT CONTROL DESK, WITH A COPY TO THE APPROPRIATE REGIONAL OFFICE, AND A COPY TO THE APPROPRIATE NRC RESIDENT INSPECTOR. IF THE COMMUNICATION IS ON PAPER, THE SUBMISSION TO THE DOCUMENT CONTROL DESK MUST BE THE SIGNED ORIGINAL.

Action Request Assignment Completion Notes

Action Request Assignment Status History

Updated Date	Updated By	Assgn Status	Assgn Due Date
03/05/2019	I44004	INPROG	
03/07/2019	I44004		03/14/2019
03/07/2019	I44004	NTFY/ASG	
03/07/2019	I44004	ACC/ASG	

DUKE ENERGY

Duke Energy

ACTION REQUEST - 02260849

Action Request Assignment Attributes

Request Attribute	Values	Reqd	Date
1A COMMITTED Name :		N	

Request Attribute	Values	Reqd	Date
1B CHANGE BASIS Name :		N	

Request Attribute	Values	Reqd	Date
2A COMMENTS Name :		N	

Request Attribute	Values	Reqd	Date
BENEFIT REALIZED Name :		N	

Request Attribute	Values	Reqd	Date
FINAL ISSUE Name :		N	

Request Attribute	Values	Reqd	Date
IMPORTANT TO NRC Name :		N	

Request Attribute	Values	Reqd	Date
IT LABOR ESTIMATE Name :		N	

Request Attribute	Values	Reqd	Date
LTAM ISSUE ID Name :		N	

Duke Energy

ACTION REQUEST - 02260849

Request Attribute	Values	Reqd	Date
PHC DUE DATE Name :		N	

Request Attribute	Values	Reqd	Date
PLANT HEALTH ISSUE ? Name :		N	

Request Attribute	Values	Reqd	Date
RTTQ Name :		N	

Request Attribute	Values	Reqd	Date
T+1 CRITIQUE Name :		N	

Request Attribute	Values	Reqd	Date
WBS Name :		N	

Action Request Assignment Routing/Return Comments

Routing Comments from the X601 Panel	Updated On	Updated By
*** No Routing Comments Found ***		

Routing Comments from the X602 Panel	Updated On	Updated By
*** No Return Comments Found ***		

Action Request Assignment Completion Approval

Action Request Assignment Cause/Action

DUKE ENERGY

Duke Energy

ACTION REQUEST - 02260849

Action Request Assignment Reference Documents

Facility	Doc Type	Sub Type	Document	Sheet	Rev	Minor Rev	Title

Action Request Assignment Reference Equipment

Facility	Unit	System	Equip Type	Equip Number	Equip Tag	Equip Status	Rev	Rev Status

Action Request Assignment Cross References

Ref Type	Ref Nbr	Ref Sub	Ref Nbr Type	Status	Limit AS Cls	Description

Action Request Assignment Appendices

Action Request Assignment Details

ASSIGNMENT NUMBER : 05 **SUB** :

Type	: GNRL	**Due Date**	: 04/06/2019	**Pri Resp Fac**	:
Status	: ACC/ASG	**Reschedule**	:	**Pri Resp Group**	:
Assigned To	: DOUGLAS M BRUNSON			**Sec Resp Fac**	:
Subject	: LICENSING SUBMIT 50.54(Q) TO NRC WITHIN 30 DAYS OF CHANGE			**Sec Resp Group**	:
Aff Facility	: CN	**Unit**	:	**System**	:
UCR	:	**Schedule Ref**	:		
Organization	:	**Department**	: 10410	**Discipline**	:
Est Manhrs	:	**Ext Comp Date**	:		

Description

THE REGULATION AT 10 CFR 50.54(Q)(5) REQUIRES THE LICENSEE TO SUBMIT, AS SPECIFIED IN 10 CFR 50.4(B)(5)(II), A REPORT OF EACH CHANGE TO THE EMERGENCY PLAN MADE WITHOUT PRIOR NRC APPROVAL, INCLUDING A SUMMARY OF ITS ANALYSIS, WITHIN 30 DAYS AFTER THE CHANGE IS PUT IN EFFECT. THE NRC HAS STATED THAT THE SUMMARY REPORT OR A FULL COPY OF THE COMPLETED 50.54(Q) MAY BE

SUBMITTED TO SATISFY THIS REQUIREMENT. SUBMIT, WITHIN 30 DAYS OF IMPLEMENTING THE CHANGE, THE FULL 50.54(Q) OR SUMMARY (AS DESCRIBED IN AD-EP-ALL-0602) FOR ALL CHANGES TO THE EMERGENCY PLAN MADE WITHOUT PRIOR NRC APPROVAL TO THE NRC'S DOCUMENT CONTROL DESK, WITH A COPY TO THE APPROPRIATE REGIONAL OFFICE, AND A COPY TO THE APPROPRIATE NRC RESIDENT INSPECTOR. IF THE COMMUNICATION IS ON PAPER, THE SUBMISSION TO THE DOCUMENT CONTROL DESK MUST BE THE SIGNED ORIGINAL.

Action Request Assignment Completion Notes

Action Request Assignment Status History

Updated Date	Updated By	Assgn Status	Assgn Due Date
03/05/2019	I44004	INPROG	
03/07/2019	I44004		04/06/2019
03/07/2019	I44004	NTFY/ASG	
03/07/2019	DMBRUNS	ACC/ASG	

Action Request Assignment Attributes

Request Attribute	Values	Reqd	Date
1A COMMITTED		N	
Name :			

Request Attribute	Values	Reqd	Date
1B CHANGE BASIS		N	
Name :			

Request Attribute	Values	Reqd	Date
2A COMMENTS		N	
Name :			

Request Attribute	Values	Reqd	Date
BENEFIT REALIZED		N	
Name :			

Request Attribute	Values	Reqd	Date
FINAL ISSUE Name :		N	

Request Attribute	Values	Reqd	Date
IMPORTANT TO NRC Name :		N	

Request Attribute	Values	Reqd	Date
IT LABOR ESTIMATE Name :		N	

Request Attribute	Values	Reqd	Date
LTAM ISSUE ID Name :		N	

Request Attribute	Values	Reqd	Date
PHC DUE DATE Name :		N	

Request Attribute	Values	Reqd	Date
PLANT HEALTH ISSUE ? Name :		N	

Request Attribute	Values	Reqd	Date
RTTQ Name :		N	

Request Attribute	Values	Reqd	Date
T+1 CRITIQUE Name :		N	

Request Attribute	Values	Reqd	Date
WBS Name :		N	

Duke Energy

ACTION REQUEST - 02260849

Action Request Assignment Routing/Return Comments

Routing Comments from the X601 Panel	Updated On	Updated By
*** No Routing Comments Found ***		

Routing Comments from the X602 Panel	Updated On	Updated By
*** No Return Comments Found ***		

Action Request Assignment Completion Approval

Action Request Assignment Cause/Action

Action Request Assignment Reference Documents

Facility	Doc Type	Sub Type	Document	Sheet	Rev	Minor Rev	Title

Action Request Assignment Reference Equipment

Facility	Unit	System	Equip Type	Equip Number	Equip Tag	Equip Status	Rev	Rev Status

Action Request Assignment Cross References

Ref Type	Ref Nbr	Ref Sub	Ref Nbr Type	Status	Limit AS Cls	Description

Action Request Assignment Appendices

END OF REPORT

Catawba Nuclear Station
Attachment 2
Emergency Plan Revision 19-03
Plan Update Instructions

Replace Revision 19-02 Coversheet with Revision 19-03 Coversheet

List of Effective Pages (LOEP)
Replace all pages of this section

Tab P – Responsibility for the Planning Effort
Replace all pages of this section

Tab Q – Appendices
Replace all pages of this section

Catawba Nuclear Station
Attachment 3
Emergency Plan
Emergency Plan Revision 19-03

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LIST OF EFFECTIVE PAGES (LOEP)

EMERGENCY PLAN SECTION	PAGE NUMBER	REVISION NUMBER	DATE
Emergency Plan Approval Cover Sheet		16-1	March 2016
Table of Contents			
	1	150	February 2019
	2	150	February 2019
	3	150	February 2019
	4	150	February 2019
	5	150	February 2019
	6	150	February 2019
List of Figures, Tables and Attachments			
	7	16-1	March 2016
	8	16-1	March 2016
	9	16-1	March 2016
Introduction			
	i-1	16-1	March 2016
	i-2	16-1	March 2016
	i-3	16-1	March 2016
	i-4	16-1	March 2016
	i-5	16-1	March 2016
	i-6	16-1	March 2016
Section A			
	A-1	150	September 2017
	A-2	150	September 2017
	A-3	150	September 2017
	A-4	150	September 2017
	A-5	150	September 2017
Section B			
	B-1	165	January 2019
	B-2	165	January 2019
	B-3	165	January 2019
	B-4	165	January 2019
	B-5	165	January 2019
	B-6	165	January 2019
	B-7	165	January 2019
	B-8	165	January 2019
	B-9	165	January 2019
	B-10	165	January 2019
	B-11	165	January 2019
	B-12	165	January 2019
	B-13	165	January 2019
	B-14	165	January 2019
	B-15	165	January 2019
Section C			
	C-1	16-1	March 2016
	C-2	16-1	March 2016
Section D			
	1-258 (all pages)	147	March 2017
Section E			
	E-1	148	February 2019
	E-2	148	February 2019

LIST OF EFFECTIVE PAGES (LOEP)

EMERGENCY PLAN SECTION	PAGE NUMBER	REVISION NUMBER	DATE
	E-3	148	February 2019
	E-4	148	February 2019
	E-5	148	February 2019
	E-6	148	February 2019
	E-7	148	February 2019
	E-8	148	February 2019
	E-9	148	February 2019
	E-10	148	February 2019
Section F			
	F-1	16-1	March 2016
	F-2	16-1	March 2016
	F-3	16-1	March 2016
	F-4	16-1	March 2016
	F-5	16-1	March 2016
	F-6	16-1	March 2016
	F-7	16-1	March 2016
Section G			
	G-1	161	February 2019
	G-2	161	February 2019
	G-3	161	February 2019
Section H			
	H-1	149	September 2017
	H-2	149	September 2017
	H-3	149	September 2017
	H-4	149	September 2017
	H-5	149	September 2017
	H-6	149	September 2017
	H-7	149	September 2017
	H-8	149	September 2017
	H-9	149	September 2017
	H-10	149	September 2017
	H-11	16-1	March 2016
	H-12	16-1	March 2016
	H-13	16-1	March 2016
	H-14	16-1	March 2016
Section I			
	I-1	147	September 2017
	I-2	147	September 2017
	I-3	147	September 2017
	I-4	147	September 2017
Section J			
	J-1	147	September 2017
	J-2	147	September 2017
	J-3	147	September 2017
	J-4	147	September 2017
	J-5	147	September 2017
	J-6	147	September 2017
	J-7	147	September 2017

LIST OF EFFECTIVE PAGES (LOEP)

EMERGENCY PLAN SECTION	PAGE NUMBER	REVISION NUMBER	DATE
	J-8	147	September 2017
	J-9	147	September 2017
Section K			
	K-1	144	September 2017
	K-2	144	September 2017
	K-3	144	September 2017
	K-4	144	September 2017
Section L			
	L-1	11-1	May 2011
	L-2	11-1	May 2011
Section M			
	M-1	161	September 2017
	M-2	161	September 2017
	M-3	161	September 2017
	M-4	161	September 2017
	M-5	161	September 2017
Section N			
	N-1	149	February 2019
	N-2	149	February 2019
	N-3	149	February 2019
Section O			
	O-1	144	September 2017
	O-2	144	September 2017
Section P			
	P-1	149	March 2019
	P-2	149	March 2019
	P-3	149	March 2019
	P-4	149	March 2019
	P-5	149	March 2019
	P-6	149	March 2019
	P-7	149	March 2019
Section Q			
	Q-1	152	March 2019
Appendix 1			
	Q-1.1	152	March 2019
	Q-1.2	152	March 2019
	Q-1.3	152	March 2019
	Q-1.4	152	March 2019
	Q-1.5	152	March 2019
	Q-1.6	152	March 2019
	Q-1.7	152	March 2019
	Q-1.8	152	March 2019
Section Q, Appendix 2			
	Q-2.1	152	March 2019
	Q-2.2	152	March 2019
	Q-2.3	152	March 2019
	Q-2.4	152	March 2019
Appendix 3			
	Q-3.1	152	March 2019
	Q-3.2	152	March 2019

LIST OF EFFECTIVE PAGES (LOEP)

EMERGENCY PLAN SECTION	PAGE NUMBER	REVISION NUMBER	DATE
	Q-3.3	152	March 2019
	Q-3.4	152	March 2019
	Q-3.5	152	March 2019
Appendix 4			
	Q-4.1	152	March 2019
Appendix 5			
	Q-5.1	152	March 2019
	Q-5.2	152	March 2019

P. RESPONSIBILITY FOR THE PLANNING EFFORT

To assure that responsibilities for plan development, review and distribution of emergency plans are established and that the Emergency Preparedness Staff is properly trained.

P.1 Emergency Preparedness Staff Training

Emergency Preparedness Group personnel attend training/workshops, information exchange meetings with other licensees, and conferences held by industry and government agencies, as available, to maintain current knowledge of the overall planning effort. The Manager, Nuclear Support Services, is required to attend off-site training on an annual basis. This training will be documented in site training files.

P.2 Emergency Response Planning

The Site Vice President has the overall authority and responsibility for the Site Emergency Plan. This planning effort is delegated to the Manager, Nuclear Support Services.

P.3 Manager, Nuclear Support Services

The Manager, Nuclear Support Services, has the overall authority and responsibility for radiological emergency response planning as well as the responsibility for the development and updating of the site Emergency Plan and coordination of this plan with other response organizations.

P.4 Review of Emergency Plan

Review and updating of the site Emergency Plan shall be certified to be current on an annual basis. Any changes identified by drills and exercises shall be incorporated into the Site Emergency Plan.

On an annual basis, the Manager, Nuclear Support Services, will provide each state and local organization responsible for off-site activation and protective action decision-making, a copy of the nuclear station procedures appropriate for their area on emergency classification and notification.

A response will be requested by letter within 30 days that a review has been completed of the EALs used for event classification and for protective action recommendations. If problem areas are identified, the Manager, Nuclear Support Services, will ensure resolution.

P.5 Distribution of Revised Plans

The Emergency Plan and approved changes shall be forwarded to individuals and organizations listed in Catawba Nuclear Site Document Control Distribution Code CADM-12. Revised pages shall be dated and marked to show where changes have been made. Approved revisions of the site Emergency Plan and Implementing Procedures shall be forwarded to the Site Vice President or designee and made available to the Chairman at the Nuclear Safety Review Board.

P.6 Supporting Plans

Figure P-1 gives a detailed listing of supporting plans to the Catawba Nuclear Station Emergency Plan.

P.7 Implementing Procedures

Written procedures will be established, implemented, and maintained covering the activities associated with emergency plan implementation. Each procedure, and changes thereto, shall be reviewed and approved by the responsible implementing manager (line manager or the manager responsible for Emergency Preparedness oversight) prior to implementation and shall be reviewed periodically as set forth in administrative procedures.

Catawba Emergency Plan Implementing Procedures are listed in Figure P-2 with a reference to the section of Emergency Plan implemented by each procedure. Catawba Emergency Plan Implementing Procedures and approved changes shall be forwarded to individuals and organizations listed in Catawba Nuclear Site Document Control Distribution Code CADM-12.

P.8 Table of Contents

The Catawba Nuclear Station Emergency Plan contains a specific table of contents. The Catawba Nuclear Station Emergency Plan has been written to facilitate cross-reference to the applicable sections of NUREG-0654 Rev. 1.

P.9 Audit of Emergency Plan

The Nuclear Safety Review Board Chairman will arrange for an independent review of Catawba Nuclear Station's Emergency Preparedness Program as necessary, based on an assessment against performance indicators, and as soon as reasonably practicable after a change occurs in personnel, procedures, equipment or facilities that potentially could adversely affect emergency preparedness, but no longer than 12 months after the change. In any case, all elements of the emergency preparedness program will be reviewed at least once every 24 months. The independent review will be conducted by the Nuclear Oversight-Audits and will include the following plans, procedures, training programs, drills/exercises, equipment and state/local government interfaces:

1. Catawba Nuclear Station Emergency Plan and Implementing Procedures
2. State/Local Support Agency Training Program
3. Site Training Program
4. Public and Media Training/Awareness
5. Equipment - Communications, Monitoring, Meteorological, Public Alerting
6. State/Local Plan Interface

The review findings will be submitted to the appropriate corporate and nuclear site management. Appropriate portions of the review findings will be reported to the involved federal, state, and local organizations. The corporate or nuclear site management, as appropriate, will evaluate the findings affecting their area of responsibility and ensure effective corrective actions are taken. The result of the review, along with recommendations for improvements, will be documented and retained for a period of five years.

P.10 Telephone Number Updates

Telephone numbers listed in the Catawba Nuclear Station Emergency Plan Implementing Procedures will be updated quarterly in accordance with PT/0/B/4600/005B, Quarterly Communications Verification, and TE-EP-ALL-0407, Periodic Verification of EOF Communication Equipment Operation and Equipment/Supply Inventory.

DUKE ENERGY
CATAWBA NUCLEAR STATION
FIGURE P-1

SUPPORTING PLANS

1. South Carolina Operational Radiological Emergency Response Plan, Appendix 2 South Carolina Emergency Operation Plan (Catawba Nuclear Station, part 4)

2. North Carolina Emergency Response Plan for Nuclear Power Facilities (Catawba Nuclear Site, part 2, section 4)

3. York County, S.C., Emergency Operations Plan

4. Emergency Response Plan, Water Reactors Division, Westinghouse Electric Corporation

5. N.R.C. Region II Incident Response Plan

6. Interagency Radiological Assistance Plan - Region 3 - U.S. Department of Energy

7. INPO Emergency Response Plan

DUKE ENERGY
CATAWBA NUCLEAR STATION
FIGURE P-2
EMERGENCY PLAN IMPLEMENTING PROCEDURES

Procedure #	Title	Emergency Plan Section Implemented
AD-EP-ALL-0101	Emergency Classification	Section D, E, I.1
AD-EP-ALL-0103	Activation and Operation of the Emergency Operations Facility (EOF)	Section B, C, H
AD-EP-ALL-0104	ERO Common Guidelines and Forms	Section B, E, F, G, I, J, K, M
AD-EP-ALL-0105	Activation and Operations of the Technical Support Center (TSC)	Section B, H, E
AD-EP-CNS-0105	CNS Site Specific TSC Support	Section B.H
AD-EP-ALL-0106	Activation and Operations of the Operations Support Center (OSC)	Section B, H
AD-EP-CNS-0106	CNS Site Specific OSC Support	Section B, H
AD-EP-ALL-0108	Joint Information System Support	Section G
AD-EP-ALL-0109	Protective Action Recommendations	Section J.7
AD-EP-ALL-0110	Recovery	Section M
AD-EP-ALL-0202	Emergency Response Off-Site Dose Assessment	Section D, I,
AD-EP-ALL-0203	Field Monitoring During Declared Emergency	Section D, I, H.6.b
AD-EP-CNS-0203	CNS Site Specific Field Monitoring Information	Section I
AD-EP-ALL-0204	Distribution of Potassium Iodide Tablets in the Event of a Radioiodine Release	Section J.6
AD-EP-ALL-0205	Emergency Exposure Controls	Section K.2
AD-EP-ALL-0301	Activation of the Emergency Response Organization Notification System	Section E
AD-EP-ALL-0304	State and County Notifications	Section E , J.7
AD-EP-ALL-0406	Duke Emergency Management Network (DEMNET)	Section F
AP/0/A/5500/046	Hostile Aircraft Activity	Section D
RP/0/A/5000/001	Classification of Emergency	Section D, E, I.1
RP/0/A/5000/002	Notification of Unusual Event	Section D, E
RP/0/A/5000/003	Alert	Section D, E
RP/0/A/5000/004	Site Area Emergency	Section D, E
RP/0/A/5000/005	General Emergency	Section D, E, J, K
RP/0/A/5000/006	Deleted	
RP/0/A/5000/006A	Notifications to States and Counties from the Control Room	Section E, J.7
RP/0/A/5000/006B	Deleted	

Procedure #	Title	Emergency Plan Section Implemented
RP/0/A/5000/006C	Deleted	
RP/0/A/5000/007	Natural Disaster and Earthquake	Section D, H, H.6.a
RP/0/A/5000/008	Deleted	
RP/0/B/5000/008	Hazardous Materials Spill Response	Section D
RP/0/A/5000/009	Collision/Explosion	Section D
RP/0/A/5000/010	Conducting a Site Assembly or Preparing the Site for an Evacuation	Section E, J, K
RP/0/A/5000/011	Deleted	
RP/0/B/5000/012	Deleted	
RP/0/B/5000/013	NRC Notification Requirements	Section E
RP/0/B/5000/014	Deleted	
RP/0/B/5000/015	Core Damage Assessment	Section D
RP/0/B/5000/016	Deleted	
RP/0/B/5000/017	Deleted	
RP/0/A/5000/018	Deleted	
RP/0/B/5000/019	Deleted	
RP/0/A/5000/020	Deleted	
RP/0/A/5000/021	Deleted	
RP/0/B/5000/022	Deleted	
RP/0/B/5000/023	Deleted	
RP/0/A/5000/024	Deleted	
RP/0/B/5000/025	Deleted	
RP/0/B/5000/026	Site Response to Security Events	Section D
RP/0/B/5000/028	Deleted	
HP/0/B/1000/006	Emergency Equipment Functional Check and Inventory	Section H.10, H.11, K.5
HP/0/B/1009/001	Deleted	
HP/0/B/1009/003	Radiation Protection Response Following A Primary to Secondary Leak	Section D, E, I
HP/0/B/1009/004	Deleted	
HP/0/B/1009/005	Personnel/Vehicle Monitoring for Emergency Conditions	Section D, J
HP/0/B/1009/006	Alternative Method for Determining Dose Rate within the Reactor Building	Section D, I
HP/0/B/1009/007	Inplant Particulate and Iodine Monitoring Under Accident Conditions	Section D, I
HP/0/B/1009/008	Contamination Control of Injured Individuals	Section D, K.5, L.1, L.4
HP/0/B/1009/009	Deleted	
HP/0/B/1009/012	Deleted	

Procedure #	Title	Emergency Plan Section Implemented
HP/0/B/1009/014	Radiation Protection Actions Following an Uncontrolled Release of Liquid Radioactive Material	Section D, I
HP/0/B/1009/016	Deleted	
HP/0/B/1009/017	Deleted	
HP/(1/2)/B/1009/017	Deleted	
HP/0/B/1009/018	Deleted	
HP/0/B/1009/019	Emergency Radio System Operation, Maintenance and Communication	Section F.1.d
HP/0/B/1009/024	Implementing Procedure for Estimating Food Chain Doses Under Post-Accident Conditions	Section I.9
HP/0/B/1009/025	Deleted	
HP/0/B/1009/026	Deleted	
SH/0/B/2005/001	Deleted	
SH/0/B/2005/002	Deleted	
SH/0/B/2005/003	Deleted	
OP/0/A/6200/021	Deleted	
SR/0/B/2000/002	Deleted	
SR/0/A/2000/001	Deleted	
SR/0/A/2000/003	Deleted	
SR/0/A/2000/004	Deleted	

DUKE ENERGY
CATAWBA NUCLEAR STATION

APPENDIX INDEX

Appendix 1	Definitions
Appendix 2	Meteorological System Description
Appendix 3	Alert and Notification System Description
Appendix 4	Evacuation Time Estimates
Appendix 5	Agreement Letters

1.0 DEFINITIONS

AFFECTED PERSONS
Persons who have received radiation exposure or have been physically injured as a result of an accident to a degree requiring special attention as individuals, e.g., decontamination, first aid or medical services.

ALERT
Events are in process 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 protection action guideline exposure levels.

ALL (As relates to Operating Mode Applicability)
Modes 1,2,3,4,5,6 and No Mode (Defueled)

ANNUAL
For periodic emergency planning requirements, annual is defined as twelve months with a maximum interval of 456 days.

ASSESSMENT ACTION
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
For periodic emergency planning requirements, biennial is defined as at least once every two years, with a maximum interval of 912 days. (Note that this does not apply to the scheduling of biennial exercises. An exercise can occur at any time during the second calendar year after the previous exercise.)

BOMB
Refers to an explosive device suspected of having sufficient force to damage plant systems or structures.

CARF
Containment Air Return Fan

CIVIL DISTURBANCE
A group of ten (10) or more people violently protesting station operations or activities at the site. A civil disturbance is considered to be violent when force has been used in an attempt to injure site personnel or damage plant property.

CORRECTIVE ACTIONS

Emergency measures taken to ameliorate or terminate an emergency situation at or near the source of the problem to prevent an uncontrolled release of radioactive material or to reduce the magnitude of the release, e.g., shutting down equipment, fire-fighting, repair and damage control.

CREDIBLE THREAT

A threat should be considered credible when:

- Physical evidence supporting the threat exists.
- Information independent (law enforcement) from the actual threat message exists that supports the threat.
- A specific group or organization claims responsibility for the threat.

DRILL

A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation.

EMERGENCY ACTION LEVELS (EALs)

A pre-determined, site-specific, observable threshold for a plant Initiating Condition that places the plant in a given emergency class. An EAL can be: an instrument reading; an equipment status indicator; a measurable parameter (onsite or offsite); a discrete, observable event; results of analyses; entry into specific emergency operating procedures; or another phenomenon which, if it occurs, indicates entry into a particular emergency class.

EMERGENCY OPERATIONS FACILITY (EOF)

The Emergency Operations Facility is the facility utilized for direction and control of all emergency and recovery activities with emphasis on the coordination of off-site activities such as dispatching mobile emergency monitoring teams, communications with local, state and federal agencies, and coordination of corporate and other outside support.

EMERGENCY PLANNING ZONE (EPZ)
The area for which planning is needed to assure that prompt and effective actions can be taken to protect the public in the event of an accident. The plume exposure EPZ is about 10 miles in radius and the ingestion exposure EPZ is about 50 miles in radius.

EMERGENCY RELEASE
Any unplanned, quantifiable radiological release to the environment during an emergency event. The release does not have to be related to a declared emergency.

EPA PAG
Environmental Protection Agency Protective Action Guidelines for exposure to a release of radioactive material.

EXCLUSION AREA
The nuclear station property, including the site, out to a radius of 2500 feet that meets the 10CFR100 definition.

EXPLOSION
A rapid, violent unconfined combustion or a catastrophic failure of pressurized equipment (e.g., a steamline or feedwater line break) that imparts energy sufficient to potentially damage or creates shrapnel to actually damage permanent structures, systems or components. An electrical breaker flash that creates shrapnel and results in damage to other components beyond scorching should also be considered.

EXERCISE
An exercise is an event that tests the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations.

EXTORTION
An attempt to cause an action at the site by threat of force.

FIRE
Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute fires. Observation of flames is preferred but is NOT required if large quantities of smoke and heat are observed. An electrical breaker flash that creates high temperatures for a short duration and merely localized scorching to that breaker and its compartment should not be considered a fire.

FRESHLY OFF-LOADED REACTOR CORE
The complete removal and relocation of all fuel assemblies from the reactor core and placed in the spent fuel pool. (Typical of a "No Mode" operation during a refuel outage that allows safety system maintenance to occur and results in maximum decay heat load in the spent fuel pool system.)

FUNCTIONAL
A component is fully capable of meeting its design function. It would be declared INOPERABLE if unable to meet Technical Specifications.

GENERAL EMERGENCY
Events are in process 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 protective action guideline exposure levels offsite for more than the immediate site area.

HOSTAGE
A person or object held as leverage against the site to ensure demands will be met by the site.

HOSTILE ACTION
An act toward an NPP or its personnel that includes the use of violent force to destroy equipment, take **HOSTAGES**, and/or intimidates the licensee to achieve an end. This includes attack by air, land or water using guns, explosives, **PROJECTILES**, vehicles or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included. **HOSTILE ACTION** should not be construed to include acts of civil disobedience or felonious acts that are not part of a concerted attack on the NPP. Non-terrorism-based EALs should be used to address such activities (e.g., violent acts between individuals in the **OWNER CONTROLLED AREA**.)

HOSTILE FORCE
One or more individuals who are engaged in a determined assault, overtly or by stealth and deception, equipped with suitable weapons capable of killing, maiming or causing destruction.

IMMINENT
Mitigation actions have been ineffective, additional actions are not expected to be successful, and trended information indicates that the event or condition will occur. Where **IMMINENT** time frames are specified, they shall apply.

INGESTION EXPOSURE PATHWAY
The principle exposure from this pathway would be from ingestion of contaminated water or foods such as milk or fresh vegetables. The time of potential exposure could range in length from hours to months.

INOPERABLE
A component does not meet Technical Specifications. The component may be functional, capable of meeting its design.

INABILITY TO DIRECTLY MONITOR
Operational Aid Computer data points are unavailable or gauges/panel indications are not readily available to the operator.

INTRUSION
A person(s) present in a specified area without authorization. Discovery of a **BOMB** in a specified area is indication of **INTRUSION** into that area by a **HOSTILE FORCE**.

ISFSI
Independent Spent Fuel Storage Installation - Includes the components approved for loading and storage of spent fuel assemblies.

LOSS
A component is INOPERABLE and not FUNCTIONAL.

MONTHLY
For periodic emergency planning requirements, monthly is defined as once each month, with a maximum interval of 38 days.

NO MODE
Defueled.

OPERATIONAL SUPPORT CENTER (OSC)
In the event of an emergency, shift support personnel (e.g., auxiliary operators and technicians) other than those required and allowed in the control room shall report to this center for further orders and assignment.

OWNER CONTROLLED AREA (OCA)
Area outside the protected area fence that immediately surrounds the plant. Access to this area is generally restricted to those entering on official business.

PLUME EXPOSURE PATHWAY
The principle exposure sources from this pathway are (a) external exposure to gamma radiation from the plume and from deposited material and (b) inhalation exposure from the passing radioactive plume. The time of potential exposure could range from hours to days.

POPULATION-AT-RISK
Those persons for whom protective actions are being or would be taken.

PROJECTILE
An object directed toward an NPP that could cause concern for its continued operability, reliability or personnel safety.

PROLONGED
A duration beyond normal limits, defined as "greater than 15 minutes" or as determined by the judgment of the Emergency Coordinator.

PROTECTED AREA
Typically, the site specific area which normally encompasses all controlled areas within the security **PROTECTED AREA** fence.

PROTECTIVE ACTIONS
Those emergency measures taken after an uncontrolled release of radioactive materials has occurred for the purpose of preventing or minimizing radiological exposures to persons that would be likely to occur if the actions were not taken.

PROTECTIVE ACTION GUIDES (PAG)
Projected radiological dose or dose-commitment values to individuals in the general population that warrant protective action following a release of radioactive material. Protective actions would be warranted provided the reduction in individual dose expected to be achieved by carrying out the preventive action is not offset by excessive risks to individual safety in taking the protective action. The PAG does not include the dose that has unavoidably occurred prior to the assessment.

QUARTERLY
For periodic emergency planning requirements, quarterly is defined as once every three months, with a maximum interval of 112 days.

REACTOR COOLANT SYSTEM (RCS/NCS) LEAKAGE
RCS Operational Leakage as defined in the Technical Specification Basis B 3.4.13.

RECOVERY ACTIONS
Those actions taken after the emergency to restore affected property as nearly as practicable to its pre-emergency condition.

RUPTURED (As relates to Steam Generator)
Existence of primary to secondary leakage of a magnitude sufficient to require or cause a reactor trip and safety injection.

SABOTAGE
Deliberate damage, misalignment or misoperation of plant equipment with the intent to render the equipment unavailable. Equipment found tampered with or damaged due to malicious mischief may not meet the definition of **SABOTAGE** until this determination is made by security supervision.

SECURITY CONDITION

Any Security Event as listed in the approved security contingency plan that constitutes a threat/compromise to site security, threat/risk to site personnel or a potential degradation to the level of safety of the plant. A **SECURITY CONDITION** does not involve a **HOSTILE ACTION**.

SEMI-ANNUAL
For periodic emergency planning requirements, semi-annual is defined as once every 6 months, with a maximum interval of 228 days.

SIGNIFICANT PLANT TRANSIENT
An unplanned event involving one or more of the following: (1) Automatic turbine runback >25% thermal reactor power, (2) Electrical load rejection >25% full electrical load; (3) Reactor Trip, (4) Safety Injection, (5) Thermal power oscillations >10%.

SITE
That part of the nuclear station property consisting of the Reactor, Auxiliary, Turbine, Service Buildings and grounds, contained within the outer security area fence.

SITE AREA EMERGENCY
Events are in process 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 the equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

SITE BOUNDARY
That area, including the protected area, in which Duke Energy has the authority to control all activities, including exclusion or removal of personnel and property.

SLC
Selected Licensee Commitments.

SUSTAINED
A duration of time long enough to confirm that the CSF is valid (not momentary).

TECHNICAL SUPPORT CENTER (TSC)
This on-site center is for use by plant management, technical and engineering support personnel. In an emergency, this center shall be used for assessment of plant status and potential off-site impact in support of the control room command and control function.

TERMINATION
Exiting the emergency condition.

TOTAL EFFECTIVE DOSE EQUIVALENT (TEDE)
The sum of external dose exposure to radioactive plume, to radionuclides deposited on the ground by the plume, and the internal exposure inhaled radionuclides deposited in the body.

TOXIC GAS
A gas that is dangerous to life or health by reason of inhalation or skin contact (e.g. chlorine).

UNCONTROLLED
Event is not the result of planned actions by the plant staff.

UNPLANNED
An event or action is UNPLANNED if it is not the expected result of normal operations, testing or maintenance. Events that result in corrective or mitigative actions being taken in accordance with abnormal or emergency procedures are UNPLANNED.

UNUSUAL EVENT
Events are in process 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 offsite response or monitoring are expected unless further degradation of safety systems occurs.

VALID
An indication or report or condition is considered to be VALID when it is conclusively verified by: (1) an instrument channel check, or (2) indications on related or redundant instrumentation, or (3) by direct observation by plant personnel such that doubt related to the instrument's operability, the condition's existence or the report's accuracy is removed. Implicit in this definition is the need for timely assessment.

VIOLENT
Force has been used in an attempt to injure site personnel or damage plant property.

VISIBLE DAMAGE

Damage to equipment or structure that is readily observable without measurements, testing or analyses. Damage is sufficient to cause concern regarding the continued operability or reliability of affected structure, system, or component. Example damage: deformation due to heat or impact, denting, penetration, rupture, cracking, paint blistering.

VITAL AREA

Areas within the PROTECTED AREA that house equipment important for nuclear safety. Access to a VITAL AREA is allowed only if an individual has been authorized to be in that area per the security plant. Therefore, VITAL AREA is a security term.

WEEKLY

For periodic emergency planning requirements, weekly is defined as once every 7 days, with a maximum interval of 9 days.

APPENDIX 2
CATAWBA NUCLEAR STATION
METEOROLOGICAL PROGRAM

INTRODUCTION

In response to guidance provided by NUREG-0654, Revision 1 and supporting documents, Regulatory Guide 1.23, Proposed Revision 1, Regulatory Guide 1.111, Revision 1, and Regulatory Guide 1.109, Duke has reviewed the existing meteorological system at Catawba Nuclear Station and, based on that review, has developed a plan for upgrading the meteorology system.

The meteorological measurement program at Catawba Nuclear Station was originally designed to best describe the meteorological conditions on-site by taking into account source characteristics, terrain features and modeling needs. Duke has changed the meteorological system by upgrading the instrumentation and modifying the data transfer and access methodologies. The modifications include:

1) The meteorological microprocessor has been replaced with a digital data link connecting the instrumentation and the station.

2) The analog chart recorders have been replaced with digital chart recorders.

3) The data is scanned and averaged by the station process monitoring computer and transferred to databases accessible by the ERO.

EFFLUENT DISPERSION MODEL

The Class A model has calculation capability that can produce initial transport and diffusion estimates for the plume exposure emergency planning zone within fifteen minutes following classification of an incident. The Class B model is a numerical model that represents actual spatial (space) and temporal (time) variations affecting plume distribution; it can provide estimates of deposition and relative concentration of radioactivity within the plume exposure and ingestion planning zones for the duration of the release. More detailed description can be found in INPO 86-008 Dose Assessment Manual.

The effluent dispersion model at Catawba uses a variable trajectory, puff advection dispersion model to simulate atmospheric transport and diffusion of radioisotopes from Catawba Nuclear Station. Plume trajectories are calculated using meteorological data obtained directly from the site meteorological tower. Puffs are transported by the horizontal wind field which varies with time. The diffusion (or spread) of each puff is based on a Gaussian distribution model. The dimensions of individual puffs, which compose the plume, are determined as a function of travel distance and atmospheric stability. Further, the initial dimensions of puffs are adjusted to account for building wake effects. Plume growth during changing atmospheric stability conditions is determined using a virtual source concept. Each puff is released at a rate which is based on current fifteen minute forecasted meteorology. The puff advection model is used for both the real-time and the forecast operating modes. In the real time mode, the model uses actual Operator Aid Computer (OAC) fifteen minute averaged data as it becomes available. For a forecast, the user is required to enter one time set of meteorological data representative of the entire period.

Radioisotopes released to atmosphere are assumed to be distributed in a Gaussian manner, subject to reflection in the vertical direction between the surface boundary and mixing layer lid (i.e., mixing height) above. The diffusion of release materials is expressed in terms of a normalized concentration χ/Q. Normalized concentrations are multiplied by a source strength Q to provide an estimate of cloud concentration $\chi(Ci/m^3)$. Puff depletion that takes in consideration the removal of iodines and

particulate from the plume as a result of dry and wet deposition; which is also calculated. Deposition fluxes are provided to assist in the identification of areas where relative high levels of surface contamination might be expected to occur. Diffusion and deposition for each puff are determined after each advection step. Modeled release from Catawba Nuclear Station is assumed to be at or below the containment structure; therefore, all releases are modeled as being emitted from ground-level sources. The model uses modified σ_y and σ_z diffusion parameters to account for building downwash effects on ground level releases. The model dispersion routines include the concept of a mixing height which recognizes that the atmosphere is heated from below as the earth absorbs the sun's ultraviolet radiation. The height above ground for this boundary, between lower unstable and upper stable air is known as the mixing height. The value for mixing height used in the model is based on seasonal afternoon mean at the site. Atmospheric stability is determined from the vertical temperature gradient (delta-temperature) for stability classification. At the end of each advection step, total dry and wet deposition from all puffs are calculated and accumulated at each model receptor location.

INSTRUMENTATION

Figure 2-1 shows the type and number of parameters measured at Catawba Nuclear Station. The meteorological conditions present at Catawba Nuclear Station warrant the use of the basic described meteorological variables. These include wind speed and wind direction measured at high and low levels, and delta-temperature. Ambient air temperature, dew point temperature and precipitation instrumentation are also provided but are not required as input for off-site dose assessment calculations.

DATA HANDLING

Meteorological data used for dose calculations are 15 minute running averages of the variables. The 15 minute running averages are determined by the Operator Aid Computer (OAC) which scans the variables each minute. The data is stored on databases that are accessed by the personnel performing the dose calculations. As a backup, the variables are also recorded each five seconds on digital chart recorders located in the Control Room. These systems meet the accuracy and other specifications suggested in Regulatory Guide 1.23, Proposed Revision 1.

DOSE ASSESSMENT METHODOLOGY

The first radiological indication of a problem in a reactor building is through increased control room monitor readings from containment particulate and noble gas (EMF) skid package. It is assumed that the first monitor to indicate increase of containment activity is the noble gas monitor because it is a non-integrating, near instantaneous response to increased noble gas radioactivity in containment. Leak rate from containment to the annulus or bypass to the environment may be based on containment design basis leakage, or leakage may be a function of containment pressure and hole size. Unit vent release may be from several ventilation source intakes including annulus and Auxiliary Building ventilation systems. It is possible both Unit 1 and 2 vents could contribute to an off-site release because of shared ventilation. Each unit vent is monitored with particulate and noble gas (EMF) skid package with indication and detection as previously stated. There are four main steam lines per unit (A,B,C,D) with coded Safety Relief valves; Power Operated Relief Valve (PORV), atmospheric steam dump valves and each unit has an auxiliary feedwater pump turbine valve release path. Steamlines have monitors (EMFs) installed, including N^{16} detectors that may provide first indication of primary to secondary leakage. Steam generator tube leakage is monitored through the affected unit Condensate Steam Air Ejector Monitor. Steam Release (MSR) accumulator program on the Operator Aid Computer scans these valves and calculate pounds mass (lbm) released based on valves being read closed or not closed.

The model can be used to calculate Source Term release through up to five release pathways and has capability of maintaining an inventory of up to twenty-four radioisotopes for each selected accident type(s). The model assumes a release to include noble gases, iodines, and particulates unless release path grab sample is obtained and analyzed, and model direct entry of nuclides is selected for Source Term calculation. Dose calculation methods attempt to predict dose concentration at specific receptor locations downwind from the release point. The model provides dose calculations from plume exposure, inhalation and material deposited on the ground consistent with methods of the EPA-400-R-92-001 document, *Manual of Protective Action Guides and Protective Actions for Nuclear Incidents*. Using dose rate conversion factors, the model calculates a combined dose from external exposure from the plume with plume inhalation and four day external exposure from material deposited on the ground (the sum of which is referred to as the Total Effective Dose Equivalent [TEDE]), as well as the Committed Dose Equivalent to the Thyroid from inhalation of radioiodines (referred to as CDE). For the forecast period (expected release duration using a default of four hours), the TEDE and its separate components, and CDE Thyroid dose is calculated and then used to determine Protective Action Recommendations (PAR) consistent with Protective Action Guides (PAGs) given in EPA 400.

DETAILED DESCRIPTION OF SUBSYSTEMS

Sensors to Operator Aid Computer

Lightning protection is provided for all sensors and signal conditioning equipment; wind sensors are outfitted with heating jackets, when necessary, for protection against icing conditions. Signal conditioners are housed in an environmentally controlled building at the base of the microwave tower. Signals to the plant are converted from analog to digital and transmitted via a data link. For each variable, one channel transmits data to the OAC and another transmits to the chart recorders.

Operator Aid Computer (OAC) to Plant Databases

The Operator Aid Computer systems use process monitoring equipment. Meteorological data is received at the station, converted from digital to analog, and scanned each minute by the Unit 2 OAC. Each minute, the fifteen minute running average of each parameter is calculated and passed to the Unit 1 OAC. Each OAC transmits data to two databases, one hosted on the site VAX system and the other hosted on a site PC server. ERO personnel can access the data on either database using PCs located in each emergency facility. Alternatively, the current data may be accessed directly on either OAC using terminals located in the Technical Support Center.

Digital Chart Recorders

Meteorological data is also received at the station, converted from digital to analog, and scanned every five seconds by digital chart recorders. These are located in the Control Room. The recorders accumulate the average of the samples for each hour and print this information on the charts.

QUALITY ASSURANCE

Meteorological components have been designed, procured and installed as a non-safety related system. New equipment has been purchased from suppliers who have provided high quality, reliable products in the past. Surveillance during construction was provided as for any other non-safety system.

Maintenance, calibration and repair procedures are available at the site for inspection. Inventories of meteorological system spare parts, sensors and components are maintained in company files.

FIGURE 2-1

CATAWBA NUCLEAR STATION
METEOROLOGICAL PARAMETERS OF THE UPGRADED SYSTEM

Measurement System	60 m (upper level)	Upper wind speed and direction
		Upper RTD
	10 m (lower level)	Lower wind speed and direction
		Lower RTD

NOTE 1: ΔT is obtained by subtracting the lower RTD from the upper RTD.

NOTE 2: Ambient dry bulb temperature, dew point and precipitation parameters are provided but not required as input for off-site dose assessment calculations.

APPENDIX 3

DUKE ENERGY
CATAWBA NUCLEAR STATION
ALERT AND NOTIFICATION SYSTEM DESCRIPTION

GENERAL DESCRIPTION

The Alert and Notification System for Catawba Nuclear Station consists of an acoustic alerting signal and notification of the public by commercial broadcast (EAS - Emergency Alert System). The system is designed to meet the acceptance criteria of Section B of Appendix 3, NUREG-0654, FEMA-REP-1, Rev. 1.

An engineering study of the Catawba Nuclear Station Alerting System was prepared by Duke-Energy and was submitted February, 1983. This is an annotated version of the study.

The Emergency plans of Duke Energy, the States of North Carolina and South Carolina, and the counties of Mecklenburg, Gaston, and York include the organizations and individuals, by title, who will be responsible for decision-making as regards the alert and notification system. The county locations from which the sirens would be activated and, potentially, the request for an EAS message would come are manned 24 hours per day. Each organization's plan describes provisions for use of public communications media or other emergency instructions to members of the public. The plans of both states include a description of the information that would be communicated to the public under given circumstances.

A. Concept of Operations

A system of 89 fixed sirens is installed and operational in the 10 mile EPZ area around Catawba Nuclear Station. A backup means of alerting and notification is described in the State and County Plans. This backup method includes reverse 911 and area-wide emergency service vehicles traversing the area giving both an alerting signal and notification message.

Each county will control the activation of the sirens within its boundaries.

B. Criteria for Acceptance

The alert and notification system for the Catawba Nuclear Station provides an alerting signal and an informational or instructional message to the population (via the EAS) on an area-wide basis throughout the 10 mile EPZ within 15 minutes from the time the cognizant off-site agencies have determined the need for such alerting exists. The emergency plans of each state include evidence of EAS preparation for emergency situations and the means for activating the system.

C. Physical Implementation

1. The activation of this alert and notification system requires procedures and relationships between both Duke Energy and the off-site agencies that support Duke and Catawba Nuclear Station.

When an incident is determined to have reached the level requiring public protective actions, Duke contacts the cognizant off-site agency via the Duke Emergency Management Network (DEMNET) and provides its recommendations. This system is available for use 24 hours per day and links the Control Room, TSC, EOF, SERT headquarters, the county warning points/EOCs, and the state Warning Point/EOCs.

2. The alert and notification system has multipurpose use built into it. The sirens are capable of producing a three minute steady signal for the nuclear plant emergency, natural disasters or nuclear attack. Procedures exist at the counties to allow activation of the sirens.

The expected performance of the sirens used in this system is described in Figure 3-1. These sirens complement existing alerting systems. The ambient background sound level in the Catawba area is taken to be 50 db for areas of "less than 2000 persons/per square mile" and 60 db for areas above this density. On this basis, the siren coverages are designed to provide a signal 10db above the average daytime ambient background.

Furthermore, the sirens have been located to assure that the maximum sound levels received by any member of the public should be lower than 126 db.

The basis for our selection of the 60 db(c) and 70 db(c) criteria is documented as follows:

Location of heavy industry - There is limited "heavy industry" in the Catawba 10 mile EPZ as described in Chapter 2 of the Catawba Nuclear Station UFSAR.

Attenuation factors with distance - 10 db loss per distance doubled (See Figure 3-1)

Siren output db(c) at 100 ft. vs. assumed range and acoustic frequency spectra -
2001AC: 127 ± 1.0db at 100 feet

Assumed ranges per Figure 3-1, 10 db loss column

Frequency Spectra:

2001AC: top frequency 705Hz

Map showing siren location - See Figure 3-2

Mounting height of sirens - 50 feet (approximate)

Special weather condition considerations (such as expected heavy snow) - None

The siren will produce a 3-minute steady signal and is capable of repetition.

Test or Maintenance	Required frequency	Duke frequency
Silent Test performed by County	Every two weeks	Weekly
Silent Test performed by Telcomm	Every two weeks	Weekly and following Corrective and Preventative Maintenance
Growl Test	Quarterly and when Preventive Maintenance is performed. A Growl Test is performed following Preventive Maintenance	Full Cycle Test is performed in lieu of the Quarterly Growl Test. See Note 3 and 4 below.
Full Cycle Test	Annually	Full Cycle/Quarterly
Preventive Maintenance	At least Annually	Annually

Notes

1. Quarterly full cycle tests fulfill/exceed the requirements for quarterly growl test.
2. Each site may elect to perform some method of feedback system verification during the full cycle test
3. For the FEMA CPG 1-17 growl test following PM, the siren chopper is sounded for a short period of time so that it never produces full sound output
4. Preventative Maintenance refers to EP FAM Attachment 3.3.14.7, Annual Siren Preventive Maintenance. Telecom may request a growl test after performing corrective or preventative maintenance to demonstrate siren functionality.

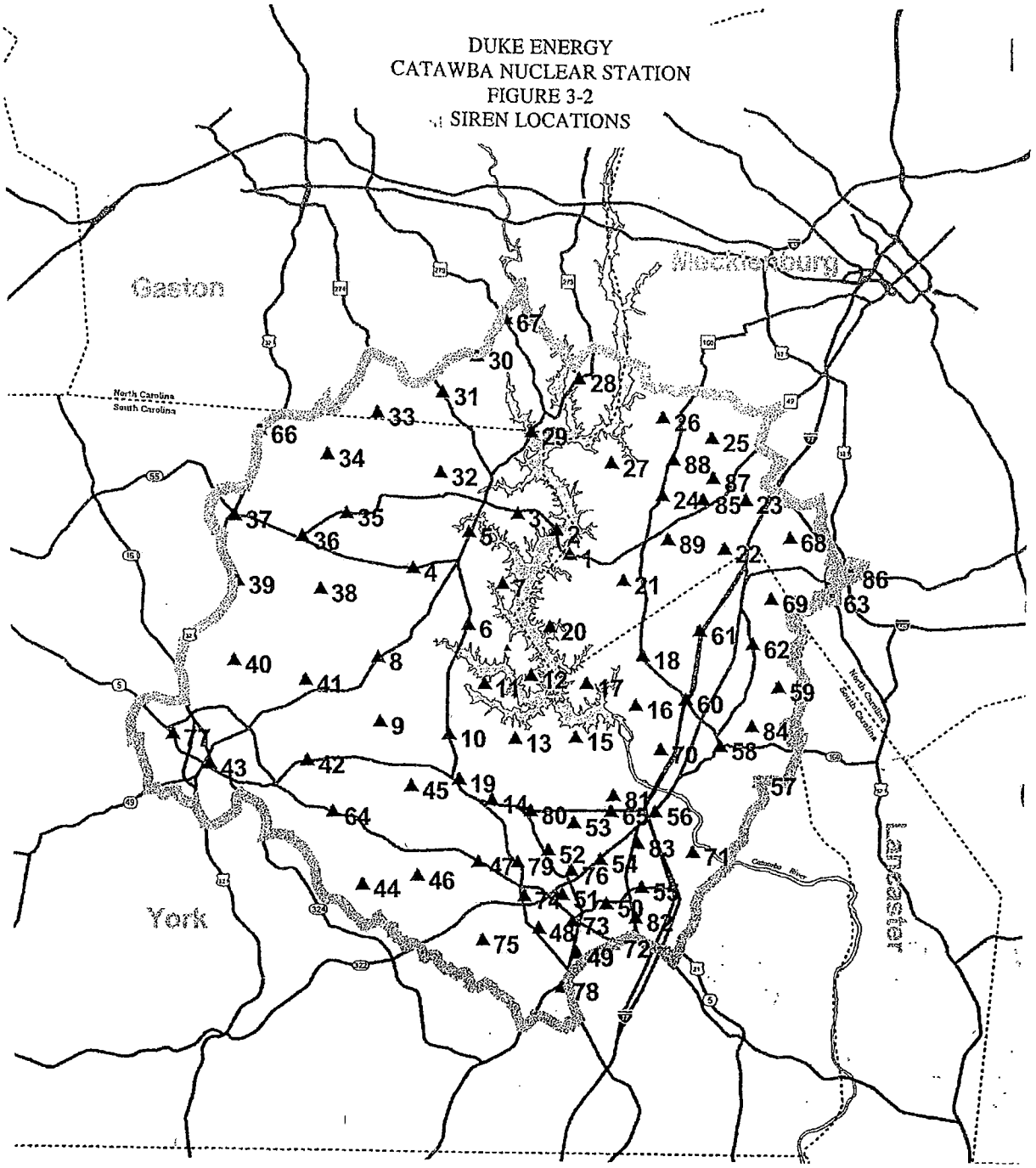
FIGURE 3-1

SIREN RANGE IN FEET

FIGURED AT 12 and 10 dB LOSS PER DISTANCE DOUBLED

Minimum Level Coverage in dB	**2001 AC 126dB(C) Siren**	
	12	**10**
85	1125	1830
80	1500	2600
75	2000	3680
73	2260	4210
70	2700	5200
68	3000	6000
65	3600	7400
60	4800	10400

DUKE ENERGY
CATAWBA NUCLEAR STATION
FIGURE 3-2
SIREN LOCATIONS



EMERGENCY PLANNING ZONE (EPZ)
FOR THE CATAWBA NUCLEAR STATION

APPENDIX 4

DUKE ENERGY
CATAWBA NUCLEAR STATION
EVACUATION TIME ESTIMATES

The Evacuation Time Estimates (ETEs) for the Catawba Nuclear Station described in part J of this plan, dated December 2012, KLD Engineering, P.C. Report KLD TR-510, Catawba Nuclear Station, Development of Evacuation Time Estimates, Revision 1, was submitted under separate cover and is considered to be incorporated as part of this document by reference.

See the following:

- CNS-ETE-12132012, Rev. 000 (Part 1 of 2): PART 1 OF 2 - EVACUATION TIME ESTIMATES (ETE) REPORTS DATED 12/13/2012, REVISION 000 FOR CATAWBA NUCLEAR STATION.
- CNS-ETE-12132012, Rev. 000 (Part 2 of 2): PART 2 OF 2 - EVACUATION TIME ESTIMATES (ETE) REPORTS DATED 12/13/2012, REVISION 000 FOR CATAWBA NUCLEAR STATION.

The studies have been submitted for regulatory review and have been made available to site, state, and local planners for their use.

The evacuation study is available in the CNS Emergency Planning office for study and review.

APPENDIX 5

AGREEMENT LETTERS

This Appendix contains a list of written agreements between Duke Energy and other organizations that may be required to provide support to the Catawba Nuclear Station in the event of an onsite radiological emergency. The actual agreements are maintained on file by CNS Emergency Preparedness.

1. Piedmont Medical Center - Describes the arrangements between Piedmont Medical Center and Duke Energy Corporation relative to the medical care and treatment and to also have injured personnel that may also have radioactive contamination.

2. Carolinas Medical Center - Describes the arrangements between Carolinas Medical Center and Duke Energy Corporation relative to the medical care and treatment and to also have injured personnel that may also have radioactive contamination.

3. Bethel Volunteer Fire Department Describes the type of assistance which the Bethel Volunteer Fire Department will provide to the Catawba Nuclear Station in the event of an emergency such as a radioactive release, hostile action, large scale fire, natural disaster (i.e. hurricane, tornado, earthquake, or flooding), or hazardous material issue.

4. Memorandum of Understanding between Duke Energy Carolinas, LLC and York County, South Carolina - Describes both emergency and non-emergency assistance by York County to support the Catawba Nuclear Station Emergency Plan.

5. Memorandum of Understanding between Duke Energy Carolinas, LLC and Mecklenburg County, North Carolina - Describes both emergency and non-emergency assistance by Mecklenburg County to support the Catawba Nuclear Station Emergency Plan.

6. Memorandum of Understanding between Duke Energy Carolinas, LLC and Gaston County, North Carolina - Describes both emergency and non-emergency assistance by Gaston County to support the Catawba Nuclear Station Emergency Plan.

7. Memorandum of Understanding among the State of North Carolina Department of Public Safety, North Carolina Emergency Management (NCEM), and Duke Energy Carolinas, LLC - Describes both emergency and non-emergency assistance by the State of North Carolina Department of Public Safety, North Carolina Emergency Management (NCEM), and the State of North Carolina Division of Health Service Regulation, Radiation Protection Section (RPS) to support the Catawba Nuclear Station Emergency Plan.

8. Memorandum of Understanding among the South Carolina Emergency Management Division, the South Carolina Department of Health and Environmental Control, and Duke Energy Carolinas, LLC - Describes both emergency and non-emergency assistance by the South Carolina Emergency Management Division, the Carolina Department of Health and Environmental Control to support the Catawba Nuclear Station Emergency Plan.

9. Center for Emergency Medicine - Describes the arrangements Center of Emergency Medicine and Duke Energy Corporation relative to the medical care and treatment and to also have injured personnel that may also have radioactive contamination.

10. Deleted

11. REACTS - Describes the arrangement for the US Department of Energy (DOE) REAC/TS facilities and team to be available to provide back-up capability and assistance to Duke Energy Carolinas, LLC, and Duke Energy Progress, Inc. in the event of a radiological emergency.

12. DOE - Savannah River - DOE - Savannah River--Describes the arrangements between the US Department of Energy, National Nuclear Safety Administration to support the Emergency Plans of the Duke Energy Carolinas and Duke Energy Progress nuclear sites DOE/NNSA assistance will be advice, detection and identification of radioactive materials, and/or monitoring and assessment actions essential for the control of the immediate hazards to health and safety.

13. INPO - Certifies that INPO will assist the Catawba Nuclear Station in acquiring of other organizations in the nuclear industry as described in Section 1 of the Emergency Resources Manual, INPO 03-001 and the United States Industry Response Framework.

14. Deleted

15. Joint Information Center - Establishes an agreement regarding, and provides reference to , the operating guidelines, processes, and procedures governing the use of Joint Information System (JIS) and Joint Information Centers (JIC) by providing a holistic approach for a communications response to a declared emergency or significant event at the Catawba Nuclear Station.

16. Memorandum of Understanding between CNS EP, Work Control, Operations, Site Services and Information Technology on Use of OSC/OCC Area - Establishes that the OSC/OCC/WCC is a multi-purpose facility with the OSC in a state of readiness at all times for compliance with the station's Emergency Plan.

17. Alternate Site Agreement - Describes the terms and conditions of the agreement between the Catawba Nuclear Station and the McGuire Nuclear Station for using either facilities existing business unit space; in this case the Technical Support Center or Alternate Technical Support Center as an alternate site Emergency Operations Facility in the event of a service disruption and/or a disaster rendering the primary Emergency Operations Facility unavailable and relocation of the primary Emergency Operations Facility is necessary.

18. Deleted.

19. Memorandum of Understanding between Nuclear Generation Department and the Distribution Maintenance and Construction-West Department Concerning Use of the York Operations Center as Catawba Nuclear Station's Evacuation/ Assembly/Staging Site - Provides an off-site location where personnel released from Catawba Nuclear Station can assemble, be monitored for radiation and, if necessary decontaminated.

20. Memorandum of Understanding between Safe Industries and Catawba, McGuire and Oconee Nuclear Sites - Describes the agreement to the request by Duke Energy regarding assistance with technical support after hours and in emergency situation. In the event a Duke Energy site is in need of emergency technical support , trouble shooting, or assistance with the equipment or operation of Hale pumps

21 Operating Agreement between Duke Energy's Lincoln Combustion Turbine Facility and McGuire, Catawba and Oconee Nuclear Stations Nuclear Supply Chain - Documents the contingency plan between Duke Energy's Lincoln Combustion Turbine Facility and Duke Energy's McGuire, Catawba, and Oconee Nuclear Stations concerning the Lincoln Combustion Turbine Facility providing the emergency supply of diesel fuel during a disruption of normal diesel fuel supply.

22. York County Sherriff's Office to Support the Emergency Plan of the Catawba Nuclear Station - Provides for assistance to support the Catawba Nuclear Station's Emergency Plan, including assistance expected to be provided in the event of an emergency.

These agreements are verified current through annual recertification of the Catawba Emergency Plan. A copy of the annual recertification (including the agreements) is maintained on file by CNS Emergency Preparedness.