

**SUBJECT:
SUBMITTAL OF PETITION FOR RULEMAKING – CODIFY
GM EV-2 INTO THE NRC's EMERGENCY PLANNING
REGULATIONS**

October 19, 2005

Secretary
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001.

Dear Secretary:

On September 29, 2005, I received a copy of Nuclear Regulatory Commission (NRC) Senior Nuclear Engineer Michael Jamgochian's Differing Professional Opinion (DPO) submitted on NRC Form 680. In the DPO, Mr. Jamgochian concluded that the criteria in Federal Emergency Management Agency (FEMA) GM EV-2 "must be codified into the NRC's emergency planning regulations in order to permit the NRC to make a finding that 'there is reasonable assurance that protective measures can and will be taken' " (p. 1, Block #10).

Mr. Jamgochian's DPO indicates that "the consequences of not codifying state and local government[s] specific responsibilities for day care and nursery school children is that these children in Pennsylvania will not have preplanned evacuation capabilities in the event of an emergency. Therefore, the NRC would not be able to find that there is a reasonable assurance that protective measures can and will be taken in the event of an emergency." (p. 2, Block #11.)

Template = SECY-067

SECY-02

Mr. Jamgochian sites relevant NRC regulations, and lists direct evidence sent to the NRC that led him to these conclusions.

Inaction is not an option. The *status quo* is unacceptable. Failure to act may endanger the licenses of all five nuclear generating stations in Pennsylvania since FEMA has been reaching a false finding for emergency planning compliance for the past 19 years. Moreover, an NRC Review of Public Comments on PRM 50-79 makes it clear that this violation is shared by other reactor states.

I agree with Mr. Jamgochian's conclusions, and propose a proactive course of action to correct the deficiencies identified in the Differing Professional Opinion.

Based on the conclusions and evidence cited in Mr. Jamgochian's DPO, I submit this new petition for rulemaking which seeks to codify FEMA's 1986 Guidance Memorandum EV-2 "Protective Actions for School Children" into the NRC's emergency planning regulations.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Eric J. Epstein", written in a cursive style.

Eric J. Epstein, Coordinator

Mr. Epstein is the Coordinator of the EFMR Monitoring group, a nonpartisan community based organization established in 1992. EFMR monitors radiation levels at Peach Bottom and Three Mile Island nuclear generating stations, invests in community development, and sponsors remote robotics research.

Enclosures
Certificate of Service

PETITION GUIDELINES

According to the guidance posted on the NRC's website:
<http://ruleforum.llnl.gov/nrcforum/petition.html> the petition must as a minimum:

- 1. Set forth a general solution to the problem or present the substance or text of any proposed regulation or amendment or specify the regulation that is to be revoked or amended;***
- 2. State clearly and concisely your grounds for and interest in the action requested; and***
- 3. Include a statement in support of the petition that sets forth the specific issues involved; your views or arguments with respect to those issues; relevant technical, scientific, or other data involved that is reasonably available to you; and any other pertinent information necessary to support the action sought.***

Consistent with NRC guidance and protocol, the enclosed Petition contains the following elements:

<u>I. BASIS FOR THIS PETITION FOR RULEMAKING</u>	p. 4
<u>II. SOLUTION TO THE PROBLEM</u>	p. 5
<u>III. GROUNDS FOR AND INTEREST</u>	p. 6
<u>IV. STATEMENTS IN SUPPORT</u>	p. 7
Michael Jamgochian's Differing Professional Opinion: Block #10	pp. 8-9
Michael Jamgochian's Differing Professional Opinion: Block #1	pp. 10-12
<u>V. SUMMARY</u>	p. 13
CERTIFICATE OF SERVICE	p. 14
ATTACHMENTS (PDF)	Exhibits 1 & 2

I. BASIS FOR THIS PETITION FOR RULEMAKING

I support Nuclear Regulatory Commission (NRC) Senior Nuclear Engineer Michael Jamgochian's Differing Professional Opinion (DPO). More specifically, I agree with Mr. Jamgochian's conclusions that "GM EV-2 must be codified into the NRC's emergency planning regulations."

I am submitting Michael Jamgochian's Differing Professional Opinion (DPO) as the basis for this Petition for Rulemaking. The DPO serves three objectives as stipulated by the Commission's guidelines:

- (1) My general solution to the problem;
- (2) My grounds for and interest in the actions requested; and
- (3) My statement in support, evidence and technical data for this petition for rulemaking.

Please refer to **Exhibit #1**, Nuclear Regulatory Commission (NRC) Senior Nuclear Engineer Michael Jamgochian's Differing Professional Opinion (DPO) for the basis of this Petition for Rulemaking.

II. SOLUTIONS TO THE PROBLEM

- 1) Set forth a general solution to the problem or present the substance or text of any proposed regulation or amendment or specify the regulation that is to be revoked or amended.***

My proposed “general solution to the problem” is the codification of the requirements listed in FEMA’s 1986 Guidance Memorandum EV-2 “Protective Actions for School Children” (**Exhibit #2**) into NRC’s emergency planning regulations.

III. GROUNDS FOR AND INTEREST

- 2) State clearly and concisely your grounds for and interest in the action requested.***

My “grounds for and interest in the actions requested” in this Petition for Rulemaking are embedded in Mr. Jamgochian’s Differing Professional Opinion.

Mr. Jamgochian’s DPO clearly states that “the consequence[s] of not codifying state and local government[’s] specific responsibilities for day care and nursery school children is that these children in Pennsylvania will not have preplanned evacuation capabilities in the event of an emergency. Therefore, the NRC would not be able to find that there is a reasonable assurance that protective measures can and will be taken in the event of an emergency.” (p. 2, Block #11)

I agree with Mr. Jamgochian's conclusions cited in his DPO, which serve as my "grounds for and interest in the action requested" in this proposed Petition for Rulemaking.

Please refer to **Exhibit #1**, Nuclear Regulatory Commission (NRC) Senior Nuclear Engineer Michael Jamgochian's Differing Professional Opinion (DPO) for the basis of this Petition for Rulemaking.

IV. STATEMENT IN SUPPORT

3) *Include a statement in support of the petition that sets forth the specific issues involved; your views or arguments with respect to those issues; relevant technical, scientific, or other data involved that is reasonably available to you; and any other pertinent information necessary to support the action sought*

Statements in support of this Petition for Rulemaking can be found in Mr. Jamgochian's DPO which cites relevant NRC regulations and lists direct evidence sent to the NRC that leads him to conclude that "GM EV-2 must be codified into the NRC's emergency planning regulations."

I agree with Mr. Jamgochian's conclusions cited in his DPO.

Therefore, I submit the attached DPO in its entirety as my statement in support that sets forth the specific issues involved; my views or arguments with respect to this issue; relevant technical data and/or other pertinent information necessary to support the action I seek in this Petition for Rulemaking.

Please refer to **Exhibit #1**, Nuclear Regulatory Commission (NRC) Senior Nuclear Engineer Michael Jamgochian's Differing Professional Opinion (DPO) for the basis of this Petition for Rulemaking.

Michael Jamgochian's Differing Professional Opinion*

NRC FORM 680

9/7/05

10. DESCRIBE THE PRESENT SITUATION, CONDITION, METHOD, ETC., WHICH YOU BELIEVE SHOULD BE CHANGED OR IMPROVED.

I believe that FEMA and the State of Pennsylvania does not comply with FEMA guidance that NRC bases it's licensing decisions on, I believe that the criteria in FEMA GM-EV-2 must be codified into NRC's emergency planning regulations, in order to permit the NRC to make a finding that "there is reasonable assurance that protective measures can and will be taken." I also believe that the 120 day clock contained in 10 CFR 50.54(s)(2) should be implemented in Pennsylvania during the rulemaking. My beliefs are based on the fact that in 45 FR 55406, dated August 19, 1980 the Commission stated that the NRC will "review FEMA findings and determinations on the adequacy and capability of implementation of State and local plans (and will) make decisions with regard to the overall state of emergency preparedness (i.e, integration of the licensee's emergency preparedness as determined by the NRC and of the State/local governments as determined by FEMA and reviewed by NRC) and issuance of operating licenses or shutdown of operating reactors. FEMA will approve State and local emergency plans and preparedness, where appropriate, based upon its findings and determinations with respect to the adequacy of State and local plans and the capabilities of State and local governments to effectively implement these plans and preparedness measures. These findings and determinations will be provided to the NRC for use in it's licensing process." In 45 FR 55403 dated August 19, 1980, the Commission emphasized the importance of preplanning for emergencies by stating, "In order to discharge effectively its statutory responsibilities, the Commission must know that proper means and procedures will be in place to assess the course of an accident and its potential severity, that NRC and other appropriate authorities and the public will be notified promptly, and that adequate protective actions in response to actual or anticipated conditions can and will be taken." Since September 2002, I have been responsible for evaluating the merits of a Petition For Rulemaking (PRM 50-79) "Emergency Planning For Nursery Schools and Day Care Centers." After evaluating all public comments received, along with several discussions with the petitioners, FEMA, several state and local governments and NRC staff and management. I developed a Commission paper recommending that the petition be denied (SECY- 05-0045, dated March 11, 2005). This SECY was concurred in by FEMA, NRC Office directors and the EDO. I based my recommendation to deny this petition on my fundamental belief that current requirements and

* Also see the actual DPO in the Attachments section of this Petition for Rulemaking.

guidance, along with state and local government established emergency plans provide reasonable assurance of adequate protection of all members of the public, including all public and private schools, day care centers and nursery schools, in the event of a nuclear power plant incident, and that no new regulations were required. The petition did raise questions about implementation and compliance with relevant requirements and guidelines that were thought to be previously determined to be adequate in the petitioners state and local area. Accordingly, the petition was recommended to the Commission to be denied and forwarded to FEMA for investigation into implementation problems relating to the preplanning of protective actions for day care centers and nursery schools. Because the real problem is implementation and not regulations, FEMA committed to the NRC and the petitioners that the implementation concerns relating to the elements in GM-EV-2 would be fully demonstrated and evaluated during the May 05 TMI exercise. The demonstration of the elements in EV-2 for nursery schools and day care centers was not adequately demonstrated during the TMI exercise. Therefore, I can no longer support the staff position to deny PRM 50-79. I believe that my current position is confirmed by letters from Pennsylvania and supported by the following. The petitioner stated, and the comment letters from FEMA, PEMA, Penn. Governor and the Mayor of Harrisburg confirmed that the preplanned protective measures for public and private elementary, middle and high schools is very different then the preplanned protective measures for licen[s]ed day care and nursery schools. This is not consistent with NRC and FEMA's regulations and guidelines. FEMA's Guidance Memorandum EV-2 require that state and local emergency plans address, at a minimum, preplanned transportation resources that are to be available for evacuating all schools including day care and nursery schools. Preplanned evacuation reception and care centers will be established for all schools, preplanned alert and notification procedures are to be established for all schools and preplanned public information for parents and guardians of all schools including day care and nursery schools. The petitioner stated that all of the above does not exist for nursery schools and day care centers in Pennsylvania. FEMA, PEMA, the Pennsylvania Governor and the Mayor of Harrisburg have confirmed that all of the above exist only for public and private elementary, middle or high schools and does not exist for nursery schools and day care centers. FEMA and PEMA has documented that PEMA will notify day care and nursery schools of an existing emergency but that it is the responsibility of the day care and nursery schools and the parents to take the necessary protective actions instead of the state or local government. In a letter dated March 24, 2005, the NRC told the petitioner that protective actions for nursery schools in accordance with EV-2 would be evaluated in the May 05 TMI offsite exercise. The FEMA report on the TMI exercise did not show an evaluation of all the requirements in EV-2 for nursery schools or day care centers.

**11. IN ACCORDANCE WITH THE GUIDANCE PRESENTED IN NRC
MANAGEMENT DIRECTIVE 10.159.**

The Commission's emergency planning regulations, specifically 10 CFR 50.47(a)(1), require that nuclear power plant licensees develop and maintain emergency plans that provide reasonable assurance that adequate protective actions can and will be taken for the protection of the public in an emergency. Section 50.47(a)(2) states that the NRC will base its findings regarding adequacy of these plans on a review by NRC of FEMA, who will determine if the plans are adequate and whether there is reasonable assurance that they can be implemented. NRC and FEMA promulgated NUREG-0654/FEMA-REP-1 to provide detailed guidance on the development and implementation of these plans. Appendix 4 in NUREG-0654 details the requirements for the identification and planning for special facility populations and schools. FEMA Guidance Memorandum (GM) EV-2, "Protective Actions For School Children," provides guidance to assist federal officials in evaluating adequacy of state and local government offsite emergency plans and preparedness for protecting school children during a radiological emergency. The term "school" refers to all public and private schools, pre-schools, and licensed day care centers with 10 or more students. The state and local government offsite emergency plans shall address, at a minimum, preplanned transportation resources available for evacuating all schools including the licensed day care and nursery schools; preplanned reception and care centers for all schools including day care and nursery schools, alert and notification procedures for all schools including day care and nursery schools and public information for parents and guardians of all schools including day care and nursery school children. No evidence has been presented to show that Pennsylvania complies with these emergency planning requirements. The consequences of not codifying state and local government specific responsibilities for day care and nursery school children is that these children in Pennsylvania will not have preplanned evacuation capabilities in the event of an emergency. Therefore, the NRC would not be able to find that "there is reasonable assurance that protective measures can and will be taken in the event of an emergency. Thus requiring NRC to implement the 120 day clock contained in 10 CFR 50.54(s)(2) and to grant the petition for rulemaking (50-79) to codify the criteria contained in GM-EV-2.

The protective actions that were described in the TMI exercise report for nursery schools and day care centers is that "Municipalities in the Commonwealth of Pennsylvania are the responsible offsite response organizations for notifying day care centers located in their geographical/political boundaries in the event of an incident occurring at TMI. The municipal plans and procedures require that day care centers be notified of an incident at TMI at the Alert, Site Area and General Emergency and/or when Protective Action Decisions are announced."

The TMI Exercise report further stated that "Each municipality has a Notification and Resources Manual that list the names, address, point of contact and phone number of the day care centers located in their portion of the EPZ. In every case, the municipalities simulated notification of the day care centers in a timely manner pursuant to their codified plans and procedures". The above TMI Exercise descriptions of how the state and local governments will protect the health and safety of nursery school children taken in conjunction with the following quote from a FEMA letter dated April 29, 2004 to NRC, illustrates a definite [sic] lack of compliance with the regulations and guidelines.

"Please keep in mind that day care centers and nursery schools are considered private business in the Commonwealth of Pennsylvania as opposed to elementary, middle and high schools that are considered public institutions. As was stated in a letter dated January 10, 2003, from the Acting Director of the Pennsylvania Emergency Management Agency to the NRC, "Parents are legally required to send their children to public schools unless they opt to enroll them in private institutions. The use of private day-care facilities is voluntary on the parents. There is no legal requirement to send children to them." Also from a FEMA letter dated July 29, 2004 to NRC "parents should review with day care centers and nursery schools procedures and plans for the safety and protection of their children, the Commonwealth of Pennsylvania Department of Public Welfare issued a bulletin on December 27, 2003, requiring day care centers to develop an EOP. The enclosed Draft EOP for Nursery Schools delineates a listing of transportation providers and contact lists for drivers." Also

In a letter from PEMA to the petitioners dated July 30, 2004, PEMA stated that "Child care facilities are, for the most part, private business entities who in conjunction with the parents, should assume responsibility for the safety of their charges. Local government will not treat these businesses any differently than it does any other citizen. Especially in rural areas, municipal government simply may not have the resources to provide shelter. In so far as municipal shelters are available, child care providers are encouraged to use them". Also

"Child care facilities are, for the most part, private entities who should assume responsibility for their charges. As mentioned in the Day Care planning guide that's on PEMA's website "...the municipal emergency management agency may be able to help, but it won't be able to guarantee that you will remain in one group, thus complicating your accountability problems." Child day care providers should coordinate with municipal government and decided whether to use government-provided resources, or to make separate arrangements". Also "Care of their charges is ultimately the responsibility of the day care provider and the parents of the children".

"If time allows, municipal officials will issue a protective action decision. However, localized emergencies or severe time constraints may dictate that the day care facility operator must choose the most prudent course of action. The sample plan on PEMA's website lists considerations (Part II, Checklist A) that will help the day care provider to make that decision".

In a letter for the Mayor of Harrisburg to the NRC dated December 3, 2002, he stated "The exclusion of such facilities in present Radiological Emergency Plans is an omission that is certain to create confusion and chaos in the event that an evacuation would ever be ordered in one of the affected evacuation zones near a nuclear power station. Parents and others woul[d] be attempting to reach the nursery schools and day care centers, which would almost certainly delay any prospect of their orderly evacuation. Further, nursery schools and day care centers have thus far generally not put into place any evacuation plan, which means there would be an on-site confusion regarding the safety of the children entrusted to these facilities."

All of the above documentation, along with the TMI exercise results leads me to conclude that state and local emergency plans do not address preplanned transportation resources available for evacuating all public and private schools including day cares and nursery schools establishing preplanned reception and care centers for all public and private schools including day care and nursery school has not been addressed and alert and notification procedures for these schools and public information for parents and guardians of day care and nursery school children has not been preplanned.

V. SUMMARY

Mr. Jamgochian's Differing Professional Opinion clearly stated that the criteria in FEMA GM EV-2 "Protective Actions for School Children" must be codified into the NRC's emergency planning regulations in order to permit the NRC to make findings that "there is reasonable assurance that protective measures can and will be taken."

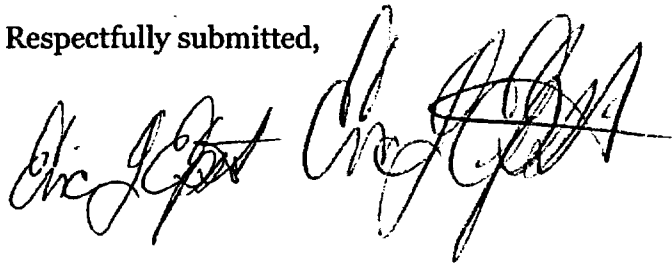
Mr. Jamgochian's DPO warned that the consequences of not codifying state and local government's specific responsibilities for day care and nursery school children is that these children will not have preplanned evacuation capabilities in the event of an emergency and the NRC would not be able to find its required level of "reasonable assurance."

Mr. Jamgochian cited relevant NRC regulations and lists direct evidence sent to the NRC that leads him to these conclusions.

I agree with Mr. Jamgochian's conclusions. Based on the veracity of the evidence sited in Mr. Jamgochian's Differing Professional Opinion, I submit this Petition for Rulemaking which seeks to codify FEMA's 1986 Guidance Memorandum EV-2 "Protective Actions for School Children" into the NRC's emergency planning regulations.

I would be glad to respond to any questions regarding this proposed Petition.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Eric J. Epstein", written over a horizontal line.

Eric J. Epstein
4100 Hillsdale Road,
Harrisburg PA 17112
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ATTACHMENTS

Exhibit #1: Michael Jamgochian's Differing Professional Opinion

Exhibit #2: FEMA's 1986 Guidance Memorandum EV-2 "Protective Actions for School Children"

CERTIFICATE OF SERVICE

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

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DATE: October 19, 2005

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NRC FORM 680 (11-2002) NRCMD 10.159		U.S. NUCLEAR REGULATORY COMMISSION		FOR PROCESSING USE ONLY	
DIFFERING PROFESSIONAL OPINION				1. DPO CASE NUMBER	
INSTRUCTIONS: <i>Prepare this form legibly and submit three copies to the address provided in Block 14 below.</i>				2. DATE RECEIVED	
3. NAME OF SUBMITTER Michael Jamgochian		4. POSITION TITLE Senior Nuclear Engineer		5. GRADE GS-15	
6. OFFICE/DIVISION/BRANCH/SECTION NRR		7. BUILDING	8. MAIL STOP 0-12-A1	9. SUPERVISOR Stephanie Coffin	
10. DESCRIBE THE PRESENT SITUATION, CONDITION, METHOD, ETC., WHICH YOU BELIEVE SHOULD BE CHANGED OR IMPROVED. (Continue on Page 2 or 3 as necessary.) <p>I believe that FEMA and the State of Pennsylvania does not comply with FEMA guidance that NRC bases its licensing decisions on, I believe that the criteria in FEMA GM-EV-2 must be codified into NRC's emergency planning regulations, in order to permit the NRC to make a finding that "there is reasonable assurance that protective measures can and will be taken." I also believe that the 120 day clock contained in 10 CFR 50.54(s)(2) should be implemented in Pennsylvania during the rulemaking. My beliefs are based on the fact that in 45 FR 55406, dated August 19, 1980 the Commission stated that the NRC will "review FEMA findings and determinations on the adequacy and capability of implementation of State and local plans (and will) make decisions with regard to the overall state of emergency preparedness (i.e, integration of the licensee's emergency preparedness as determined by the NRC and of the State/local governments as determined by FEMA and reviewed by NRC) and issuance of operating licenses or</p> <p style="text-align: center;">CONTINUED ON PAGE 2</p>					
11. DESCRIBE YOUR DIFFERING OPINION IN ACCORDANCE WITH THE GUIDANCE PRESENTED IN NRC MANAGEMENT DIRECTIVE 10.159. (Continue on Page 2 or 3 as necessary.) <p>The Commission's emergency planning regulations, specifically 10 CFR 50.47(a)(1), require that nuclear power plant licensees develop and maintain emergency plans that provide reasonable assurance that adequate protective actions can and will be taken for the protection of the public in an emergency. Section 50.47(a)(2) states that the NRC will base its findings regarding adequacy of these plans on a review by NRC of FEMA, who will determine if the plans are adequate and whether there is reasonable assurance that they can be implemented. NRC and FEMA promulgated NUREG-0654/FEMA-REP-1 to provide detailed guidance on the development and implementation of these plans. Appendix 4 in NUREG-0654 details the requirements for the identification and planning for special facility populations and schools. FEMA Guidance Memorandum (GM) EV-2, "Protective Actions For School Children," provides guidance to assist federal officials in evaluating adequacy of state and local government offsite emergency plans and preparedness for protecting school children during a radiological emergency. The term "school" refers to all public and private schools, pre-schools, and licensed day care centers with 10 or more students.</p> <p style="text-align: center;">CONTINUED ON PAGE 3</p>					
12. Check (a) or (b) as appropriate: <div style="display: flex; margin-top: 10px;"> <div style="margin-right: 10px;"><input checked="" type="checkbox"/></div> <div>a. Thorough discussions of the issue(s) raised in item 11 have taken place within my management chain; or</div> </div> <div style="display: flex; margin-top: 10px;"> <div style="margin-right: 10px;"><input type="checkbox"/></div> <div>b. The reasons why I cannot approach my immediate chain of command are:</div> </div>					
SIGNATURE OF SUBMITTER		DATE		SIGNATURE OF CO-SUBMITTER (if any)	
SIGNATURE OF CO-SUBMITTER (if any)		DATE			
13. PROPOSED PANEL MEMBERS ARE (in priority order): 1. <u>Kathy Gibson</u> 2. <u>Cathy Haney</u> 3. <u>Frank Gillespie</u>			14. Submit this form to: Differing Professional Opinions Program Manager Office of: _____ Mail Stop: _____		
15. ACKNOWLEDGMENT					
THANK YOU FOR YOUR DIFFERING PROFESSIONAL OPINION. It will be carefully considered by a panel of experts in accordance with the provisions of NRCMD 10.159, and you will be advised of any action taken. Your interest in improving NRC operations is appreciated.			SIGNATURE OF DIFFERING PROFESSIONAL OPINIONS PROGRAM MANAGER (DPOPM)		
			PRE-CONDITIONS MET <input type="checkbox"/> YES <input type="checkbox"/> NO		DATE OF ACKNOWLEDGMENT

DIFFERING PROFESSIONAL OPINION (Continued)

CONTINUE ITEM 10, ITEM 11, AND/OR ITEM 12 FROM PAGE 1. (Indicate the block number to which this information applies.)

BLOCK 10 CONTINUED - shutdown of operating reactors. FEMA will approve State and local emergency plans and preparedness, where appropriate, based upon its findings and determinations with respect to the adequacy of State and local plans and the capabilities of State and local governments to effectively implement these plans and preparedness measures. These findings and determinations will be provided to the NRC for use in its licensing process." In 45 FR 55403 dated August 19, 1980, the Commission emphasized the importance of preplanning for emergencies by stating, "In order to discharge effectively its statutory responsibilities, the Commission must know that proper means and procedures will be in place to assess the course of an accident and its potential severity, that NRC and other appropriate authorities and the public will be notified promptly, and that adequate protective actions in response to actual or anticipated conditions can and will be taken." Since September 2002, I have been responsible for evaluating the merits of a Petition For Rulemaking (PRM 50-79) "Emergency Planning For Nursery Schools and Day Care Centers." After evaluating all public comments received, along with several discussions with the petitioner, FEMA, several state and local governments and NRC staff and management. I developed a Commission paper recommending that the petition be denied (SECY-05-0045, dated March 11, 2005). This SECY was concurred in by FEMA, NRC Office directors and the EDO. I based my recommendation to deny this petition on my fundamental belief that current requirements and guidance, along with state and local government established emergency plans provide reasonable assurance of adequate protection of all members of the public, including all public and private schools, day care centers and nursery schools, in the event of a nuclear power plant incident, and that no new regulations were required. The petition did raise questions about implementation and compliance with relevant requirements and guidelines that were thought to be previously determined to be adequate in the petitioner's state and local area. Accordingly, the petition was recommended to the Commission to be denied and forwarded to FEMA for investigation into implementation problems relating to the preplanning of protective actions for day care centers and nursery schools. Because the real problem is implementation and not regulations, FEMA committed to the NRC and the petitioners that the implementation concerns relating to the elements in GM-EV-2 would be fully demonstrated and evaluated during the May 05 TMI exercise. The demonstration of the elements in EV-2 for nursery schools and day care centers was not adequately demonstrated during the TMI exercise. Therefore, I can no longer support the staff position to deny PRM 50-79. I believe that my current position is confirmed by letters from Pennsylvania and supported by the following. The petitioner stated, and the comment letters from FEMA, PEMA, Penn. Governor and the Mayor of Harrisburg confirmed that the preplanned protective measures for public and private elementary, middle and high schools is very different than the preplanned protective measures for licensed day care and nursery schools. This is not consistent with NRC and FEMA's regulations and guidelines. FEMA's Guidance Memorandum EV-2 requires that state and local emergency plans address, at a minimum, preplanned transportation resources that are to be available for evacuating all schools including day care and nursery schools. Preplanned evacuation reception and care centers will be established for all schools, preplanned alert and notification procedures are to be established for all schools and preplanned public information for parents and guardians of all schools including day care and nursery schools. The petitioner stated that all of the above does not exist for nursery schools and day care centers in Pennsylvania. FEMA, PEMA, the Pennsylvania Governor and the Mayor of Harrisburg have confirmed that all of the above exist only for public and private elementary, middle or high schools and does not exist for nursery schools and day care centers. FEMA and PEMA has documented that PEMA will notify day care and nursery schools of an existing emergency but that it is the responsibility of the day care and nursery schools and the parents to take the necessary protective actions instead of the state or local government. In a letter dated March 24, 2005, the NRC told the petitioner that protective actions for nursery schools in accordance with EV-2 would be evaluated in the May 05 TMI offsite exercise. The FEMA report on the TMI exercise did not show an evaluation of all the requirements in EV-2 for nursery schools or day care centers.

BLOCK 11 CONTINUED - The state and local government offsite emergency plans shall address, at a minimum, preplanned transportation resources available for evacuating all schools including the licensed day care and nursery schools; preplanned reception and care centers for all schools including day care and nursery schools, alert and notification procedures for all schools including day care and nursery schools and public information for parents and guardians of all schools including day care and nursery school children. No evidence has been presented to show that Pennsylvania complies with these emergency planning requirements. The consequences of not codifying state and local government specific responsibilities for day care and nursery school children is that these children in Pennsylvania will not have preplanned evacuation capabilities in the event of an emergency. Therefore, the NRC would not be able to find that "there is reasonable assurance that protective measures can and will be taken in the event of an emergency. Thus requiring NRC to implement the 120 day clock contained in 10 CFR 50.54(s)(2) and to grant the petition for rulemaking (50-79) to codify the criteria contained in GM-EV-2.

DIFFERING PROFESSIONAL OPINION (Continued)

CONTINUE ITEM 10, ITEM 11, AND/OR ITEM 12 FROM PAGE 1. (Indicate the block number to which this information applies.)

The protective actions that were described in the TMI exercise report for nursery schools and day care centers is that "Municipalities in the Commonwealth of Pennsylvania are the responsible offsite response organizations for notifying day care centers located in their geographical/political boundaries in the event of an incident occurring at TMI. The municipal plans and procedures require that day care centers be notified of an incident at TMI at the Alert, Site Area and General Emergency and/or when Protective Action Decisions are announced."

The TMI Exercise report further stated that "Each municipality has a Notification and Resources Manual that list the names, address, point of contact and phone number of the day care centers located in their portion of the EPZ. In every case, the municipalities simulated notification of the day care centers in a timely manner pursuant to their codified plans and procedures". The above TMI Exercise descriptions of how the state and local governments will protect the health and safety of nursery school children taken in conjunction with the following quote from a FEMA letter dated April 29, 2004 to NRC, illustrates a definite lack of compliance with the regulations and guidelines.

"Please keep in mind that day care centers and nursery schools are considered private business in the Commonwealth of Pennsylvania as opposed to elementary, middle and high schools that are considered public institutions. As was stated in a letter dated January 10, 2003, from the Acting Director of the Pennsylvania Emergency Management Agency to the NRC, "Parents are legally required to send their children to public schools unless they opt to enroll them in private institutions. The use of private day-care facilities is voluntary on the parents. There is no legal requirement to send children to them." Also from a FEMA letter dated July 29, 2004 to NRC "parents should review with day care centers and nursery schools procedures and plans for the safety and protection of their children, the Commonwealth of Pennsylvania Department of Public Welfare issued a bulletin on December 27, 2003, requiring day care centers to develop an EOP. The enclosed Draft EOP for Nursery Schools delineates a listing of transportation providers and contact lists for drivers." Also

In a letter from PEMA to the petitioners dated July 30, 2004, PEMA stated that "Child care facilities are, for the most part, private business entities who in conjunction with the parents, should assume responsibility for the safety of their charges. Local government will not treat these businesses any differently than it does any other citizen. Especially in rural areas, municipal government simply may not have the resources to provide shelter. In so far as municipal shelters are available, child care providers are encouraged to use them". Also

"Child care facilities are, for the most part, private entities who should assume responsibility for their charges. As mentioned in the Day Care planning guide that's on PEMA's website "...the municipal emergency management agency may be able to help, but it won't be able to guarantee that you will remain in one group, thus complicating your accountability problems." Child day care providers should coordinate with municipal government and decided whether to use government-provided resources, or to make separate arrangements". Also "Care of their charges is ultimately the responsibility of the day care provider and the parents of the children".

"If time allows, municipal officials will issue a protective action decision. However, localized emergencies or severe time constraints may dictate that the day care facility operator must choose the most prudent course of action. The sample plan on PEMA's website lists considerations (Part II, Checklist A) that will help the day care provider to make that decision".

In a letter for the Mayor of Harrisburg to the NRC dated December 3, 2002, he stated "The exclusion of such facilities in present Radiological Emergency Plans is an omission that is certain to create confusion and chaos in the event that an evacuation would ever be ordered in one of the affected evacuation zones near a nuclear power station. Parents and others would be attempting to reach the nursery schools and day care centers, which would almost certainly delay any prospect of their orderly evacuation. Further, nursery schools and day care centers have thus far generally not put into place any evacuation plan, which means there would be an on-site confusion regarding the safety of the children entrusted to these facilities."

All of the above documentation, along with the TMI exercise results leads me to conclude that state and local emergency plans do not address preplanned transportation resources available for evacuating all public and private schools including day cares and nursery schools establishing preplanned reception and care centers for all public and private schools including day care and nursery school has not been addressed and alert and notification procedures for these schools and public information for parents and guardians of day care and nursery school children has not been preplanned.



Federal Emergency Management Agency

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GUIDANCE MEMORANDUM EV-2

PROTECTIVE ACTIONS FOR SCHOOL CHILDREN

Purpose

This Guidance Memorandum (GM) is intended for Federal officials to aid them in evaluating emergency plans and preparedness for school children during a radiological emergency. This guidance is also intended for State and local government officials and administrators of public and private schools, including licensed and government supported pre-schools and day-care centers, for developing emergency response plans and preparedness for protecting the health and safety of students.

Background

The joint Federal Emergency Management Agency (FEMA) and Nuclear Regulatory Commission (NRC) guidance document, NUREG-0654/FEMA-REP-1, provides criteria for protective actions for persons, including school children, within the plume exposure pathway emergency planning zone (EPZ) in the event such protective actions are needed in response to a radiological emergency at a commercial nuclear power plant. The need to address the issue of protective actions for school children stems from both the lack of detailed guidance on this issue and the expressed interest for such guidance from public interest groups, State and local government officials and Federal Regional officials.

Scope

Guidance is provided in this GM on school evacuation in two contexts: for developing emergency response plans and for conducting and evaluating exercises. The primary method for protecting school children examined is evacuation to relocation centers. This GM is a companion of the guidance on evacuation contained in GM 21, Acceptance Criteria for Evacuation Plans. This specific guidance related to school children is appropriate because of the interest and concern expressed about protecting the health and safety of school children during a radiological emergency at a commercial nuclear power plant.

School Evacuation Considerations

Evacuation to Relocation Centers. The evacuation of school children under the continuous supervision of teachers and administrators from a school to a relocation center is a viable and reasonable approach when confronted with a radiological emergency. The decision to implement a protective action recommendation to evacuate to a relocation center should be tied to the nuclear power plant's emergency action level classification.

Some emergency response plans include the protective action strategies of early evacuation and early dismissal. If State and local governments select one of these strategies, then they ought to address it in their emergency response plan. If a State or local government elects to employ early evacuation or early dismissal, this guidance is sufficiently flexible to cover both strategies. All of the general guidance for evacuation would apply with the addition of the special considerations for early protective actions at the end of this GM.

The recommendation to school officials to evacuate the school children to relocation centers should specify the area(s) to be included in the evacuation. For example, the evacuation could include schools within the two-mile radius of the plant and within three downwind sectors beyond the two-mile radius.

Prompt evacuation is not advisable during exceptional situations such as having to drive through a radioactive plume or into a severe blizzard. Under these circumstances, the special population including school children, handicapped and/or immobile persons should be temporarily sheltered and subsequently evacuated, if need be, as soon as conditions permit.

School children and other special population evacuees (see also GM 26, RFP for Handicapped Persons) should be relocated outside the ten-mile EPZ in predesignated facilities to ensure that the accountability, safety and security of the evacuees can be maintained and to minimize vehicular traffic and telephone use within the EPZ.

General Considerations. For whatever protective action options are contained in emergency plans, the plans should include provision for notifying parents and guardians (e.g., through the Emergency Broadcast System (EBS)) of the status and location of their children during a radiological emergency. Also, the plans should document the decision making process and criteria used for developing emergency procedures for implementing protective action measures for school children. Acceptance criteria for developing and evaluating emergency planning and preparedness for school children are provided below.

Planning Standard And Evaluation Criteria

J. Protective Response

Planning Standard

A range of protective actions have been developed for the plume exposure pathway EP2 for emergency workers and the public. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EP2 appropriate to the locale have been developed. (NUREG-0654/FEMA-REP-1, p. 59)

Evaluation Criteria

J.9. Each State and local organization shall establish a capability for implementing protective actions based upon protective action guides and other criteria. This shall be consistent with the recommendations of EPA regarding exposure resulting from passage of radioactive airborne plumes (EPA-520/1-75-001), and with those of DHEW (DHHS)/FDA regarding radioactive contamination of human food and animal feeds as published in the Federal Register of December 15, 1978, (43 FR 58796) October 22, 1982 (47 FR 47073).*

J.10. The organization's plans to implement protective measures for the plume exposure pathway shall include:

J.10.a. Maps showing evacuation routes, evacuation areas, preselected radiological sampling and monitoring points, relocation centers in host areas and shelter areas (identification of radiological sampling and monitoring points shall include the designators in Table J-1 or an equivalent uniform system described in the plan);

J.10.b. Maps showing population distribution around the nuclear facility. This shall be by evacuation areas (licensees shall also present the information in a sector format);

J.10.c. Means for notifying all segments of the transient and resident population;

J.10.d. Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement;

* For your information and reference, the 12/15/78, DHHS guidance has been superseded by the 10/22/82, guidance.

J.10.g. Means of relocation;

J.10.h. Relocation centers in host areas which are at least five miles, and preferably ten miles, beyond the boundaries of the plume exposure EPZ (See K.8);

J.10.i. Time estimates for evacuation of various sectors and distances based on a dynamic analysis (time-motion study under various conditions) for the plume exposure pathway EPZ (See Appendix 4);

Appendix 4. Evacuation Time Estimates Within the Plume Exposure Pathway Emergency Planning Zone

Appendix 4.II.C. Special Facility Population

An estimate for this special population group shall usually be done on an institution-by-institution basis. The means of transportation are also highly individualized and shall be described. Schools shall be included in this segment (p. 4-3).

Areas of Review

These evaluation criteria address the key planning requirements concerning the evacuation of students from schools. The review under these criteria is intended to ensure that adequate planning and preparedness capabilities exist to enable school officials to evacuate students in the event such a protective action is necessary during a radiological emergency. This guidance covers those actions from the initial notification to school officials of the need, to evacuate the students to their arrival at relocation centers or other protective actions. In addition to these actions, the guidance also addresses time frames for accomplishing the protective actions.

For purposes of definition and reference to NUREG-0654/FEMA-REP-1, we are including "schools" among the types of institutions, the mobility of whose population may be impaired during a radiological emergency, because most students are dependent on school officials for transportation to and from their residences. (See evaluation criterion J.10.d.) Also, "schools" are explicitly referenced in Appendix 4 on pages 4-2 and 4-3 as a type of "Special Facility Population" for which evacuation time frames are needed on an institution-by-institution basis. The term, "schools," as used in this GH refers to public and private schools, and licensed or government supported pre-schools and day-care centers.

Acceptance Criteria

An emergency plan will typically be acceptable under these evaluation criteria if it fully addresses the following emergency functions for the evacuation of, or other appropriate protective measures for, school children.

Local governments should take the initiative to identify and contact all public and private school systems within the designated plume exposure pathway EPZ to assure that both public and private school officials address appropriate planning for protecting the health and safety of their students from a commercial nuclear power plant accident. The planning of both the public and private school officials should be closely coordinated with that of the local government.

Local governments should ensure that appropriate organizational officials assume responsibility for the emergency planning and preparedness for all of the identified schools. Local governments should also ensure that the emergency planning undertaken by these organizations is integrated within the larger offsite emergency management framework for the particular nuclear power plant site.

In accordance with the guidance contained in GM 21, the evacuation planning undertaken may be developed in three contexts:

- (1) Part of the existing radiological emergency preparedness plans,
- (2) A separate annex of an existing integrated emergency plan for many types of disasters and emergencies or
- (3) A separate evacuation plan for all of the schools in each school system.

School officials should document in the plan the basis for determining the proper protective action (e.g., evacuation, early preparatory measures, early evacuation, sheltering, early dismissal or combination) including:

- * Identification of the organization and officials responsible for both planning and effecting the protective action.
- * Institution-specific information:
 - Name and location of school;
 - Type of school and age grouping (e.g., public elementary school, grades kindergarten through sixth);

- Total population (students, faculty and other employees);
- Means for effecting protective actions;
- Specific resources allocated for transportation and supporting letters of agreement if resources are provided from external sources and
- Name and location of relocation center(s), and transport route(s), if applicable.
- * If parts of the institution-specific information apply to many or all schools, then the information may be presented generically.
- * Time frames for effecting the protective actions.
- * Means for alerting and notifying appropriate persons and groups associated with the schools and the students including:
 - Identification of the organization responsible for providing emergency information to the schools;
 - The method (e.g., siren and telephone calls) for contacting and providing emergency information on recommended protective actions to school officials;
 - The method (e.g., siren, tone alert radios and telephone calls) for contacting and activating designated dispatchers and school bus drivers; and
 - The method (e.g., EBS messages) for notifying parents and guardians of the status and location of their children.

Planning Standard and Evaluation Criteria

N. Exercise and Drills

Planning Standard

Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities. Periodic drills are (will be) conducted to develop and maintain key skills. Inadequacies identified as a result of exercises or drills are (will be) corrected. (NUREG-0654/FEMA-REP-1, p. 71)

Evaluation Criteria

N.1.a. 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. The emergency preparedness exercise shall simulate an emergency that results in offsite radiological releases which would require prompt response by offsite authorities. Exercises shall be conducted as set forth in NRC and FEMA rules.

N.1.b. An exercise shall include mobilization of State and local personnel resources adequate to verify the capability to respond to an accident scenario requiring response. The organization shall provide for a critique of the biennial exercise by Federal and State observers/evaluators. The scenario should be varied from exercise to exercise such that all major elements of the plans and preparedness organizations are tested within a six-year period. Each organization should make provisions to start an exercise between 6:00 p.m. and 4:00 a.m. once every six years. Exercises should be conducted during different seasons of the year within a six-year period in order to provide for exercising under various weather conditions. Some exercises should be unannounced.

N.4. Official observers from Federal, State or local governments will observe, critique and evaluate the required exercises. A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the plan. The critique shall be conducted as soon as practicable after the exercise, and a formal evaluation should result from the critique.

Areas of Review

These evaluation criteria address exercise-related requirements and their evaluation by Regional Assistance Committee (RAC) staff. In addition to identifying capabilities for evacuating students or effecting early dismissal as a "major element" of an organization's emergency response plan, suggestions are provided for conducting interviews with officials from schools during an exercise.

* These provisions conform to the revision of evaluation criterion N.1.b. of NUREG-0654/FEMA-REP-1 promulgated in GM PR-1, Policy on NUREG-0654/FEMA-REP-1 and 44 CFR 350 Periodic Requirements.

Acceptance Criteria

Requirements are set forth in FEMA (44 CFR 350.9) and NRC (10 CFR 50, Appendix E.IV.F.1-5.) rules for conducting periodic exercises and drills. Under these requirements, organizations with assigned responsibilities for protecting students are required to demonstrate through exercises their ability to implement emergency procedures contained in their emergency response plans. However, the public (e.g., school children) are not required to participate in exercises. Further, the actual use of school vehicles is optional. The demonstration of each organization's capability to implement these measures in exercises will be evaluated by FEMA and other Federal officials.

The following functions should be demonstrated and evaluated in exercises in which the evacuation of students is necessitated by events in the exercise scenario:

1. Alerting and notification of appropriate school officials by local emergency officials with respect to status of radiological emergency and need to implement protective actions, including evacuation;
2. The contacting and notification of dispatchers and school bus drivers, as appropriate, to inform them of any potential or actual need for them to transport students and
3. The provision of information to the parents and guardians, as appropriate, concerning the status and intended location or destination of the students.

With respect to simulating the evacuation of school children in an exercise, the following guidelines are provided.

1. At the discretion of school officials, the bus driver may proceed to drive a school bus to a relocation center, as necessitated by the simulated exercise events.
2. An exercise evaluator will interview the relevant personnel at the EOC's, the School Superintendent's office, the School Principal's office, and the Dispatcher's office, as well as the bus driver to determine their awareness of and preparedness for the evacuation of the school children. Pertinent questions for the exercise evaluator pertaining to the dispatcher and bus driver include:

Emergency Operations Center(s) - (EOC)

One or more EOC's may be involved in decisionmaking to effect the evacuation of schools. For example, in some States, local school evacuation must be coordinated with

State officials. In such cases, observers may need to concurrently evaluate evacuation or other protective action decisionmaking in both State and local EOC's.

1. Who made the decision for evacuation or other protective action of schools and when?
2. What specific actions (evacuation, early dismissal or shelter) are incorporated in the decision and what specific sectors/schools are impacted by this decision?
3. When and from whom did the EOC receive information about this decision?
4. When and whom did the EOC staff contact to implement this decision?
5. Did EOC staff undertake actions to assist school evacuation or other protective action such as securing guides, buses and assistance in traffic control?

School Superintendent's Office

1. When and from whom did the superintendent receive protective action instructions or recommendations? What specific instructions or recommendations did the superintendent receive?
2. What actions did the superintendent take to implement these instructions or recommendations? Whom did the superintendent contact and when?

School Principal's Office

1. When and from whom did the principal receive protective action instructions? What specific instructions did the principal receive?
2. What means of communications (e.g., telephone, tone alert) were used to provide these instructions? Did this means of communication function adequately to provide accurate and timely information?
3. What actions did the principal take to implement these instructions? Whom did the principal contact and when?

Dispatcher

1. When and from whom did the dispatcher receive the instructions? What specific instructions were received?

2. What means of communications were used? Were the communications between the dispatcher and his/her supervisor and the dispatcher and the bus driver adequate to convey appropriate and timely information?
4. When did the dispatcher initiate notification to bus drivers and guides to implement the evacuation or other protective action plan? What specific instructions were provided by the dispatcher? How long did it take to contact the bus driver to give the order to evacuate?

Bus Drivers/Guides

1. When and from whom did the bus drivers and guides receive instructions? What instructions were received?
2. When did the driver arrive at the school?
3. Did the driver have an adequate map or knowledge of the route?
4. Was the driver aware of any agreement between the drivers and local authorities for them to provide their services in the event of a radiological emergency?
5. What means of communications were used? Were communications with the dispatcher adequate to convey appropriate and timely information?
6. Did the exercise play necessitate a change in instructions to bus drivers and guides? If so, what were these new instructions? What means of communications were used to contact the bus drivers and guides? Was this means of communication adequate?

Radiation Monitoring and Protection for Bus Drivers and Guides (as designated emergency workers)

1. Were bus drivers and guides provided with specific means for radiation monitoring (e.g., dosimeters and film badges) and exposure control (e.g., potassium iodide, respiratory protection)?
2. Were bus drivers and guides trained in the proper use of these instruments and materials?
3. Were instructions provided to the bus drivers and guides for the authorization and use of potassium iodide?

4. During the exercise, were instructions given to alter evacuation/early dismissal routes in order to avert radiation exposure by bus drivers and guides?

Relocation Centers/Neighborhoods (for early dismissal)

1. When did the buses arrive at the relocation center(s)/neighborhood(s)?
2. According to the exercise scenario events, did the bus drivers go to the appropriate relocation centers/neighborhoods? Did they arrive in a timely manner to avert radiation exposure?

Provision of Emergency Instructions to Parents and Guardians

1. Was information provided to parents and guardians on the location of students, e.g., relocation centers, early dismissal to residences or sheltering? When was this information provided?
2. What means (e.g., EBS messages and telephones) were used to provide this information?
3. Was this information provided in a timely and accurate manner according to the exercise scenario events?

In some cases, answers to the above questions will be secured from direct observation of the simulated evacuation, thus obviating the interviews.

Special Considerations for Implementing Protective Actions

In addition to the guidance above on school evacuation, the following special considerations are provided for use when implementing other protective actions.

Early Preparatory Measures. In order to facilitate the implementation of protective actions, the following measures should be considered:

- a. Inventory resources for mobilization; e.g., school buses and drivers.
- b. Curtail extramural or extra curricular activities so that school children are available for prompt evacuation, if it becomes necessary.

- c. Select the method (e.g., EBS) and the draft message to notify parents and guardians of the status or destination of their children if it becomes necessary to take protective actions. _
- d. Assure that the relocation center is available in the event evacuation is necessary.

Early Evacuation. Early evacuation is accelerating the implementation of protective actions for school children prior to the activation of protective actions for the general public. For example, if a plan calls for an evacuation of the public at the "General Emergency" level, then protective actions for school children would be initiated at the "Site Area Emergency" level. In the event of a rapidly deteriorating situation, school children would be evacuated simultaneously with the general public.

Early Dismissal. While early dismissal of school children is not addressed as an evacuation option per se in NUREG-0654/FEMA-REP-1, it is incorporated in this GM as a method for accomplishing the intent of evaluation criteria under planning standard J because of its use for other types of emergencies such as imminent natural hazards (e.g., snowstorms). Hazards such as a school fire or boiler failure have a limited hazardous area, unlike an extended radiological plume; therefore, the early dismissal of students to their parents and guardians may be prudent. The greater area affected by severe weather, such as a blizzard, usually does not jeopardize the health and safety of the school children if they are dismissed early before the storm or remain sheltered in the school. In contrast, the radiological plume may make both the school and home undesirable shelters if both are in the plume exposure pathway, or if a fast moving event could escalate to while the children were in transit. Further, in the presence of unstable meteorological conditions it is difficult to project the movement of radiological releases. Therefore, the unique characteristics of a radiological emergency place limits on the use of early dismissal as a viable protective action, particularly in heavily populated areas.

Evacuation Combined With Early Dismissal. Early dismissal used in conjunction with evacuation as described above provides another option. The school children who reside in a sector of the ten-mile EPZ not effected by the potential danger or outside the ten-mile EPZ could be dismissed early to their parents, guardians or other supervision while those students whose homes are potentially in the path of a radioactive plume would be evacuated to designated relocation centers.

Sheltering. Under certain circumstances sheltering may be the preferred protective action (e.g., when there are hazardous road conditions or the possibility exists that evacuation may result in transporting students through the plume). Sheltering may be used as a primary or temporary protective action depending upon the characteristics of the radiological release and the status of weather and road conditions.

GM EV-2 is issued subsequent to review and concurrence by NRC staff who have determined that it provides clarification and interpretation of existing NUREG-0654/FEHA-REP-1 criteria applicable to protective actions for "special populations."