



Evacuation Timing and Nuclear Plant Accident Response

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Introduction

- Nuclear Power Plant (NPP) Emergency Preparedness programs are designed to reduce public dose during an unlikely severe accident
 - Mitigative measures onsite
 - Public protective actions

Introduction

- Nuclear Regulatory Commission (NRC) protective action recommendation (PAR) guidance is in NUREG-0654 Supplement 3
 - Guidance based on 1990 era NPP accident analyses

Introduction

- NRC staff recommended a review of PAR guidance
- The Commission directed that the study proceed
- Staff began study in late 2004
 - Sandia National Laboratory as consultant

PAR Study Objective

- Investigate if the use of alternative protective actions can reduce public dose during severe accidents



Alternatives Tested

Supp. 3 Revision Technical Basis

- PAR Study NUREG/CR-6953, Vol. 1
Technical Analysis
 - Evacuation remains major element
 - Staged evacuation is more protective
 - Shelter in place followed by evacuation is more protective for some scenarios
 - **Evacuation Time Estimate quality must be improved to support evacuation planning**

Supp. 3 Revision Technical Basis

- PAR Study NUREG/CR-6953, Vol. 2
Focus Groups and Telephone Survey
 - People will implement protective actions when asked
 - Message affects rate of compliance
 - Emergency responders will report for duty

Supp. 3 Revision Technical Basis

- PAR Study NUREG/CR-6953 Vol. 3
Large Early Release Technical Analysis
 - SIP for sites with 2 mile (90%) ETE > 60 minutes
 - SIP for sites with 2-5 mile (90%) ETE > 90 minutes
 - SIP 5-10 mile

Elements of Revised PAR Logic

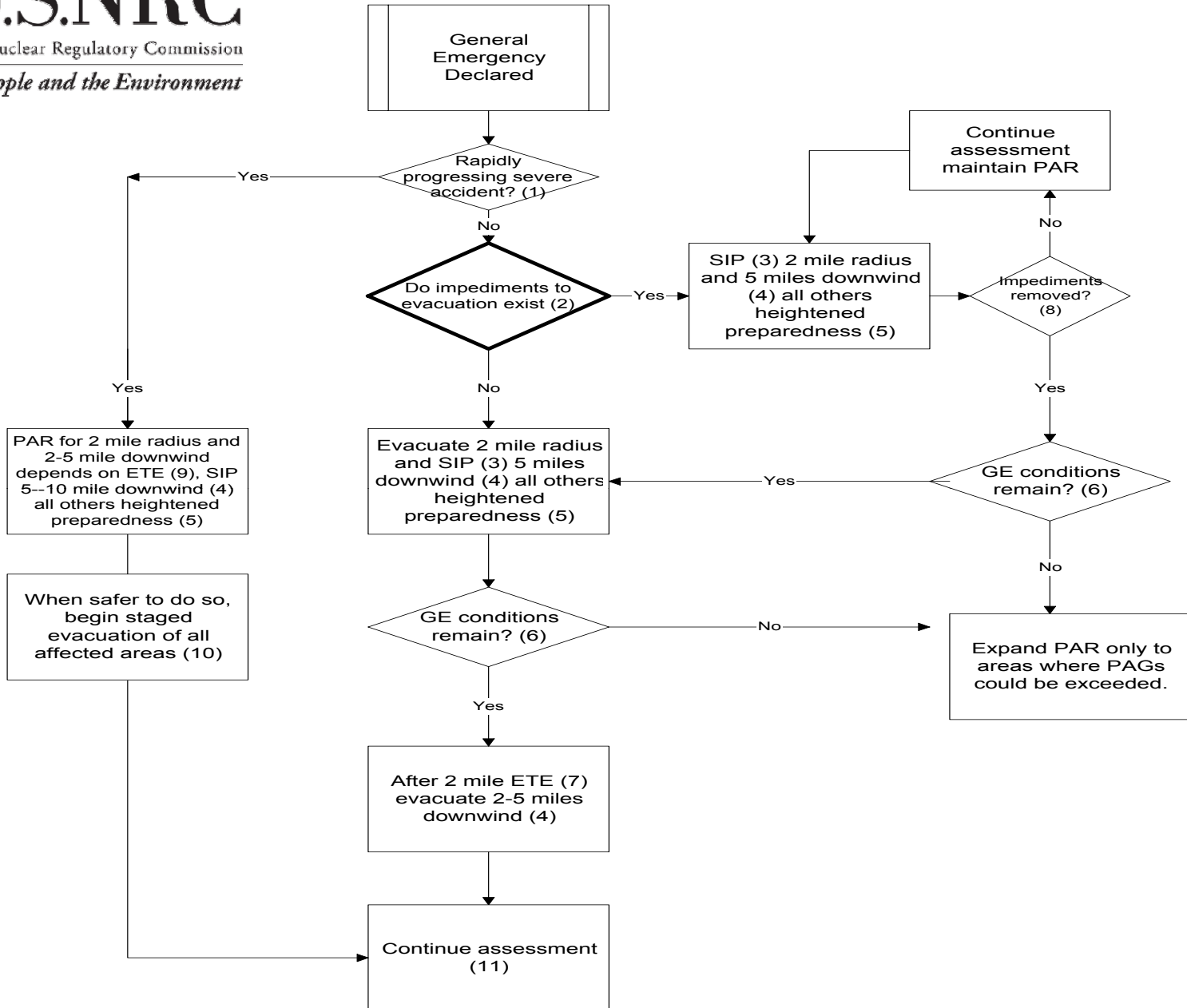
- Increased offsite response organization involvement in development
- Staged evacuation should be initial protective action
- The public will implement staged evacuation and SIP if the proper messaging is used

Elements of Revised PAR Logic

- Guidance provided for emergency messaging
- SIP when impediments to evacuation exist, including hostile action
- Pause before expansion of protective actions to account for mitigative actions

Supp. 3 Revision Status

- PAR Logic Diagram developed
- Coordinated with FEMA
- Issue in Federal Register for comment
- Expect to issue guidance in late 2010





Questions?

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