

CONTENTS

1.	INTRODUCTION.	1
1.1.	Background.....	1
1.2.	Objective.....	2
1.3.	Scope.....	2
1.4.	Structure.....	3
2.	STRUCTURAL CHARACTERISTICS OF RBMKs	4
2.1.	Reactor core and circulation circuit.	4
2.2.	Reactivity and power control.	6
2.3.	Safety systems.	7
3.	CLASSIFICATION OF INITIATING EVENTS.	8
4.	ACCEPTANCE CRITERIA.	14
4.1.	Normal operation	16
4.2.	Anticipated operational occurrences.	18
4.3.	Design and beyond design basis accidents.	20
4.4.	Fuel cladding integrity.	20
4.5.	Channel tube integrity.	25
4.6.	Integrity of MCC pipelines and components.	27
4.7.	Integrity of the reactor cavity.	30
4.8.	Integrity of the accident localization system and compartments.	32
4.8.1.	Power plants of the first generation.	32
4.8.2.	Power plants of the second generation.	32
4.8.3.	Power plants of the third generation.	34
4.8.4.	Permissible hydrogen concentration.	35
4.9.	Maximum permissible radiation doses.	35
5.	REQUIREMENTS FOR ANALYSIS.	36
5.1.	Reference state of the power plant.	38
5.2.	Input data preparation.	38
5.3.	Design basis accident scenarios.	39

6. SELECTION OF INITIAL AND BOUNDARY CONDITIONS.	40
6.1. Initial conditions.	40
6.2. Neutronic parameters.	41
6.3. Instrumentation and control.	42
6.4. Accident localization system.	42
6.5. Radioactivity source term.	42
6.6. Parametric analysis of the reactor cavity venting system.	43
7. DISCUSSION OF EVENTS.	44
7.1. Anticipated operational occurrences.	44
7.1.1. Initiating events leading to reduction in coolant flow ..	44
7.1.2. Events related to performance of turbogenerators ..,	45
7.1.3. Loss of alternating current power supply.	45
7.1.4. Events related to feedwater supply.	46
7.1.5. Excessive steam discharge from drum separators.	47
7.1.6. Spurious operation of the ECCS	47
7.2. Design basis accidents.	48
7.2.1. Loss of coolant accidents.	48
7.2.2. Reactivity initiated accidents.	51
7.2.3. Fuel handling accidents.	52
7.3. Beyond design basis accidents.	53
7.3.1. Anticipated transients without scram.	53
7.4. General recommendations.	54
8. PRESENTATION OF RESULTS	55
REFERENCES.	57
CONTRIBUTORS TO DRAFTING AND REVIEW.	59