

CONTENT

	Page
ACKNOWLEDGMENT	I
ABSTRACT	II
LIST OF TABLES	VI
LIST OF FIGURES	VII
CHAPTER 1 INTRODUCTION	1
1.1 Neutronic Safety Analysis.....	1
1.2 Radiological Safety Analysis.....	2
1.3 Thermal Heat Power Safety Analysis.....	4
1.4 Thermal Hydraulic Safety Analysis.....	6
CHAPTER 2 RELEVANT WORK SURVEY	10
2.1 Neutronics Survey.....	10
3.2 Radiological Survey.....	15
3.3 Thermalhydraulic Survey.....	19
CHAPTER 3 STORAGE PROCESS PHELOSOPHY	24
3.1 Introduction.....	24
3.2 Radioactive material Containment.....	25
3.3 Criticality Control.....	26
3.4 Radiation shielding.....	27
3.5 Heat Dissipation.....	28
CHAPTER 4 NEUTRONIC ANALYSIS	31
4.1 Introduction.....	31
4.2 Description of the Auxiliary Storage Rack.....	32
4.3 Theoretical analysis.....	36
4.4 Calculation models.....	43
CHAPTER 5 CHARACTERISTICS OF SPENT FUEL	46
5.1 Introduction.....	46
5.2 Theoretical analysis.....	47
5.3 Calculation models.....	52
CHAPTER 6 THERMALHYDRAULIC ANALYSIS	55
6.1 Introduction.....	55
6.2 Natural convection cooling.....	56

6.2 Theoretical analysis.....	56
6.3 Calculation models.....	66
CHAPTER 7 DESCRIPTION OF THE COMPUTER CODES....	68
7.1 Introduction.....	68
7.2 Neutronics Codes.....	68
7.3 Spent Fuel Characteristic Codes.....	72
7.4 Thermalhydraulic Codes.....	76
CHAPTER 8 RESULTS AND DISCUSSIONS.....	77
8.1 Introduction.....	77
8.2 Statement of the Problem.....	77
8.3 Codes Implementation to the Case Study.....	77
8.4 Criticality Results.....	79
8.5 Radiological Results.....	81
8.6 Thermal hydraulic Results.....	90
CHAPTER 9 CONCLUSIONS AND RECOMMENDATIONS....	95
R E F E R E N C E S.....	98
APPENDICES	
A R A B I C S U M M A R Y	