NUCL 402 Report Outline

Fast Reactor Core Design with a Focus on DOE work at and with Argonne National Laboratories

Assuming: Each Subsection will be 1 page, final report needs to be no longer than 10 pages.

# Abstract (Kevin)

200 Words

# Introduction (Neal)

One Paragraph

# Section I: History (Neal)

## CP-1

## CP-3 (EPR-1)

## ZPR Assemblies

[[1](#LeS01)]

# Section II: Tech Specs (Alex)

## Fuels, Design, and Moderator

[[1](#LeS01)] [[2](#Lel08)] [[3](#McK01)]

## Optimization Considerations

[[4](#Ida10)]

## Flux and Power Distributions

# Section III: Applications and Future (Kevin)

## Current Operating Fast Reactors (Mostly Research?)

## Safety Systems

[[5](#For04)]

## Breeder Reactors

# Works Cited (Alex)

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| --- | --- |
| [1] | L. G. LeSage, "An Overview of the Argonne National Laboratory Fast Critical Experiments 1963-1990," Argonne, IL, 2001. |
| [2] | Richard M Lell, James A Morman, Robert W Schaefer, and Richard D McKnight, "ZPR-6 Assembly 7 Experiments: A Fast Reactor Core with Mixed (Pu,U)-Oxide Fuel and Sodium with a Thick Depleted Uranium Reflector," Argonne, IL, 2008. |
| [3] | Richard D McKnight, Richard M Lell, Robert W Schaefer, and Amr Mohamed, "ZPPR-21 Phases B Through E: Cylindrical Assemblies of Mixed Fissile Pu and U Metal Reflected By Graphite," Argonne, IL, 2001. |
| [4] | Idaho National Laboratory. (2010) Idaho National Laboratory. [Online]. <http://www.inl.gov/research/> |
| [5] | Charles Forsberg, "Safety and Licensing Aspects of the Molten Salt Reactor," in *American Nuclear Society Annual Meeting*, Pittsburg, PA, 2004. |
| [6] | Argonne National Laboratory. (1968, February) Photograph of ZPR Facility. Photograph. [Online]. [Argonne Intranet](Argonne%20Intranet) |

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# Appendices (Alex)

[[6](#Pho)]