EPRI/NRC-RES FIRE PRA METHODOLOGY

Support Task B - Fire PRA Database

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FIRE PRA DATABASE
Purpose & Scope

- Identify Required Database Functionality
- Assess Capability of Existing Systems
- Implement Structured Process to Obtain the Required Database Capability
- New Software and Data Management Tools are Finding Their Way Into the Market

FIRE PRA DATABASE
Introduction

- Task is Distinctly Different from Other Tasks

- Essential Element of PRA
  - Proposed methods require manipulation and correlation of large amounts of data
  - Must be efficient and user friendly for effective implementation
  - Manual analysis not practical

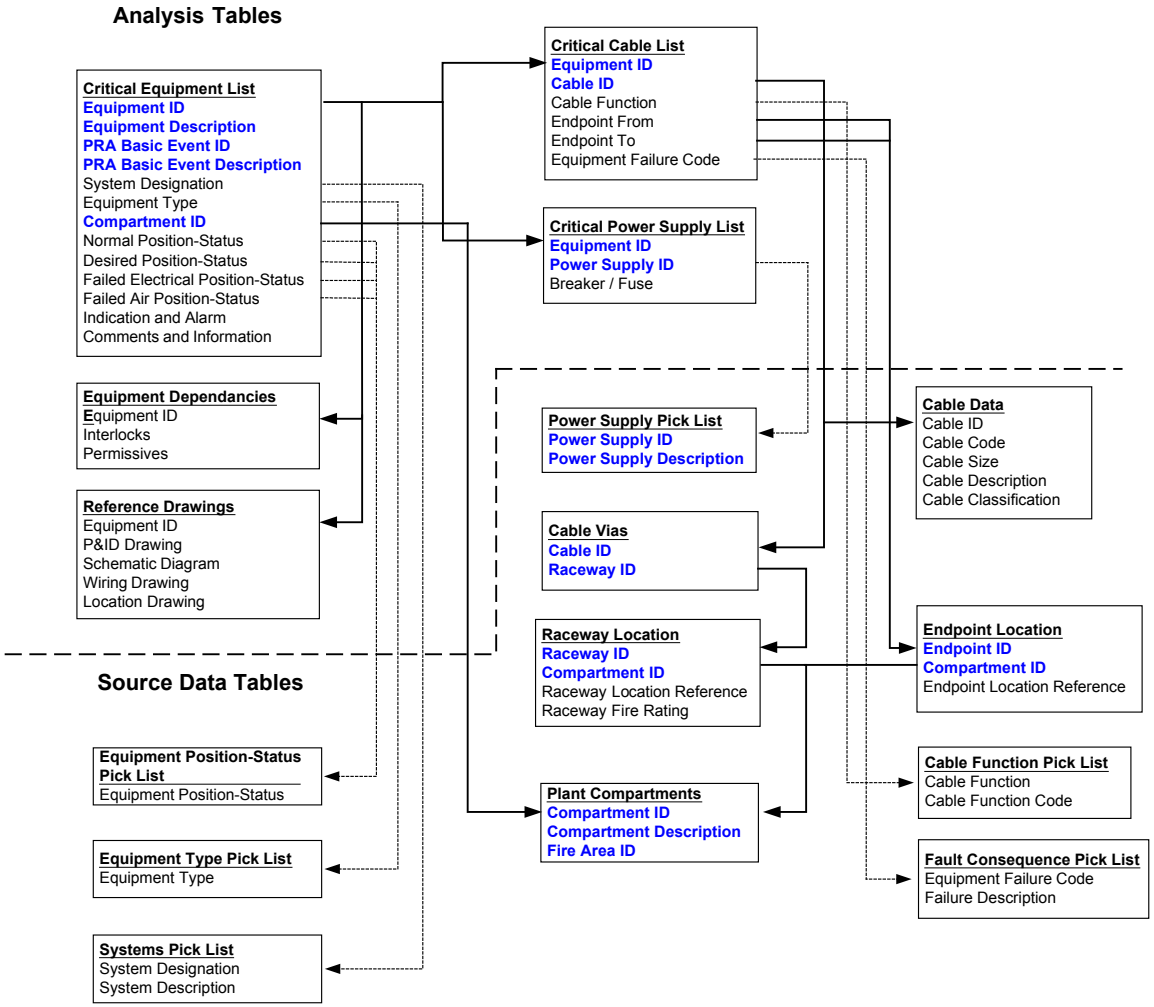
FIRE PRA DATABASE
Step 1.1 - Database Functional Criteria

- Data Input Criteria
  - In what shape and format is existing data?
  - How and who will entered and control data?
  - Will data be shared by separate groups? If so, who can change data?

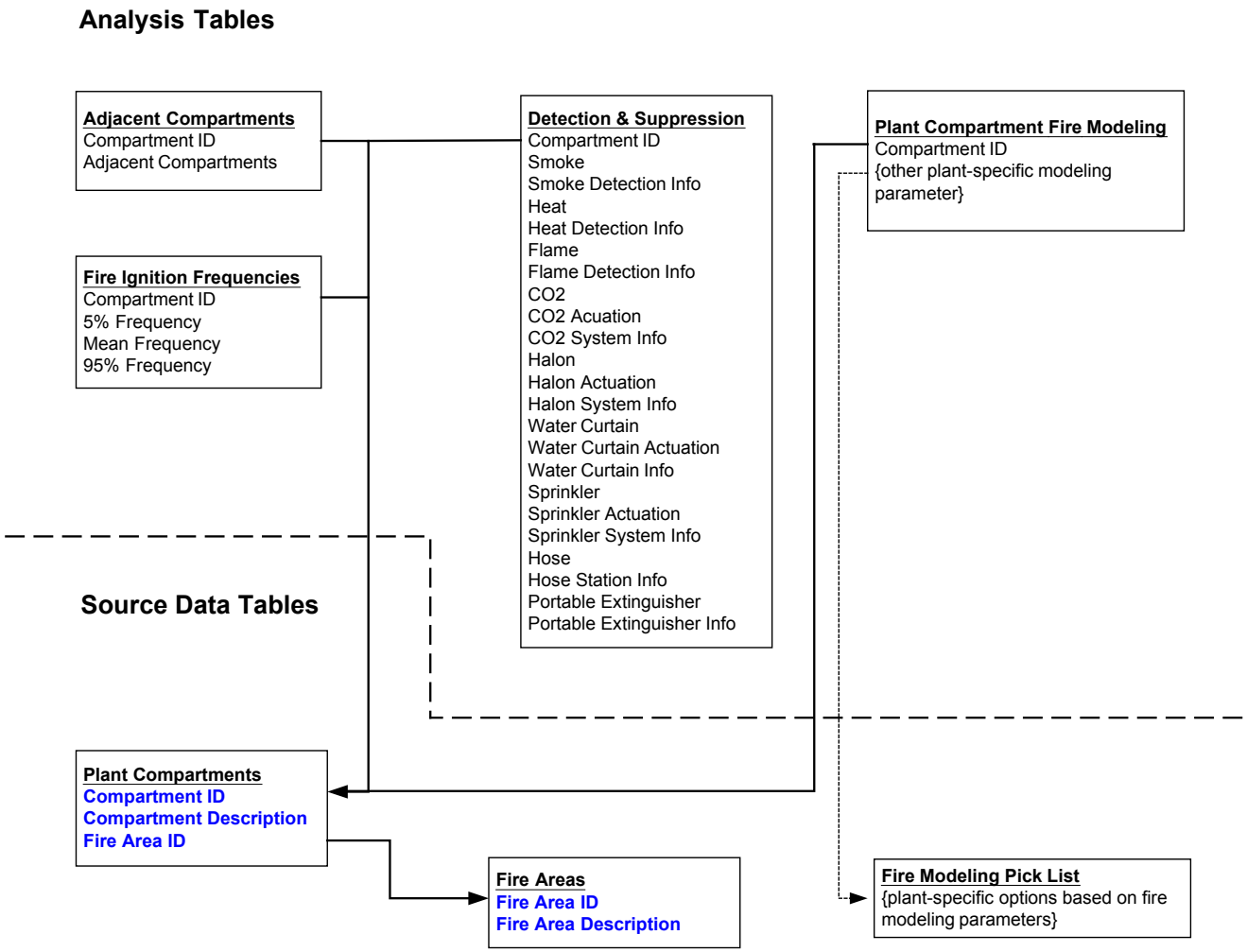
- Data Output Criteria
  - Define required output reports
  - Define sort and query options
  - Establish electronic data transfer requirements

FIRE PRA DATABASE

Step 1.2 - Database Structure (Example A)

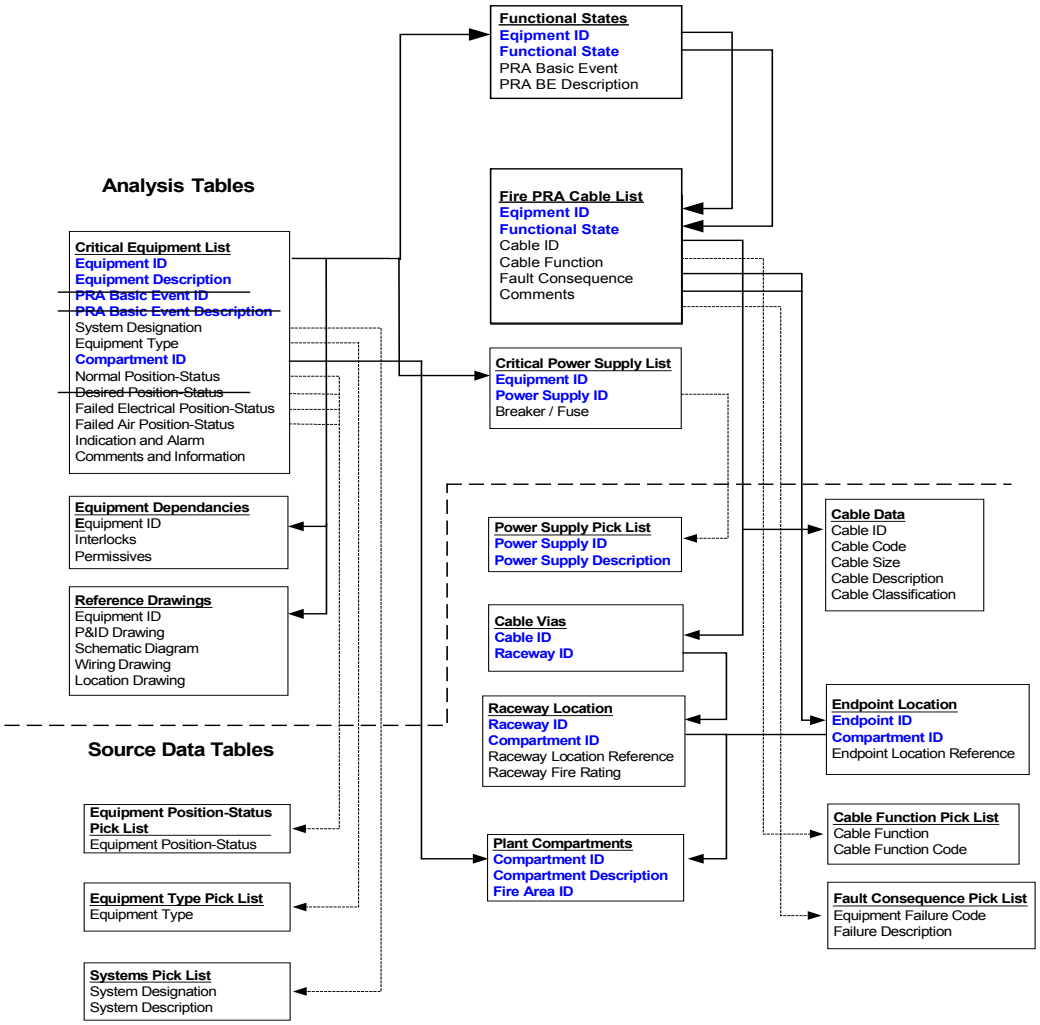


FIRE PRA DATABASE
Step 1.2 - Database Structure (Example A)



FIRE PRA DATABASE

Step 1.2 - Database Structure (Example B)



FIRE PRA DATABASE
Step 2 - Database Platform

- Decide on Platform for Database
  - Existing system
  - New stand alone system
  - Upgrade existing system
  - Combination of existing and new
- Vendors are Responding to the Call for New and Improved Software Functionality
  - Highly integrated solutions are emerging as the standard for NFPA 805 plants
  - Seamless link to Fire PRA software is just now emerging as a viable production tool

FIRE PRA DATABASE
Step 3 - Database Augmentation Plan

- Augmentation Plan is Based on the Results of Step 2
- Formalize Process for Upgrades/Changes
- Determine Necessary Resources
  - This effort can innocently affect many plant organizations
  - The cost, resources, schedule, training, procedural changes and overall impact of major software changes **ALWAYS** seems to be underestimated
- Involve IS/IT Department from the Beginning

FIRE PRA DATABASE
Step 4 – Implement Database Upgrades

- Have a Clear Plan **BEFORE** Beginning any Significant Work
- Consider Long-Term Maintainability
- Plan for De-bugging and Test Runs
- Do Not Overlook Data Integrity and Configuration Control Features
- Determine All Affected Users and Involve Them Early
- The Days of “Rogue” PRA Databases are Gone!

FIRE PRA DATABASE
Questions

Questions?