



Damping Rings / CF&S Parallel Session

Presenter
CF&S





EDR – One Definition

- **Develop a plan that includes the Scope, Cost, and Schedule for the Construction and Operations of the Damping Ring.**
 - To be based on developed technical data.
 - To be a unique design, not generalized or scaled.
 - Integrated with Sources and RTML
- **If the EDR is defined as a Plan then the Work Packages (WP) are the plan to develop the plan.**
- **Value Management must be a part of the Plan**



General Approach

General Approach - Based on a Sound System Engineering Management Approach

- **Functional Requirements Identification**
 - Defining physics requirement to engineering requirements
 - Defining boundaries, interfaces, utility needs and functional environment for each major components
- **Design Configuration Control Management**
- **Optimization Studies**
 - Design Alternatives Trade-Offs
 - Trade Studies
 - Constructability Studies
 - Value Engineering Study



Scope

- **Scope Includes:**
 - **Generating the requirements and criteria**
 - **Producing designs that provides a physical solution to the requirements**
 - **Review of the designs by the stakeholders**
 - **Value management and iterations to achieve the best value while fulfilling the required function.**
- **Cost and Schedule are a Product of the Scope.**



- **The plan to establish the requirements should contain:**
 - **A plan to establish and maintain lines of communications to transfer information with names of responsible person**
 - **A prioritized list of the requirements needed and target dates that the requirements will be provided**
 - **Date needs to be realistic, and mutually agreed upon. CF&S priority will be based on the time required for design with the available resources. For the High Priority items criteria will need to be frozen by Mar '08.**
 - **Change control process is required**



- **Communications need to improve over that used in the RDR. The emails containing random questions and answers provides only part of the overall requirements.**
- **With Webex and Video the CF&S team want to participate in the Damping Rings Coordination Meetings.**

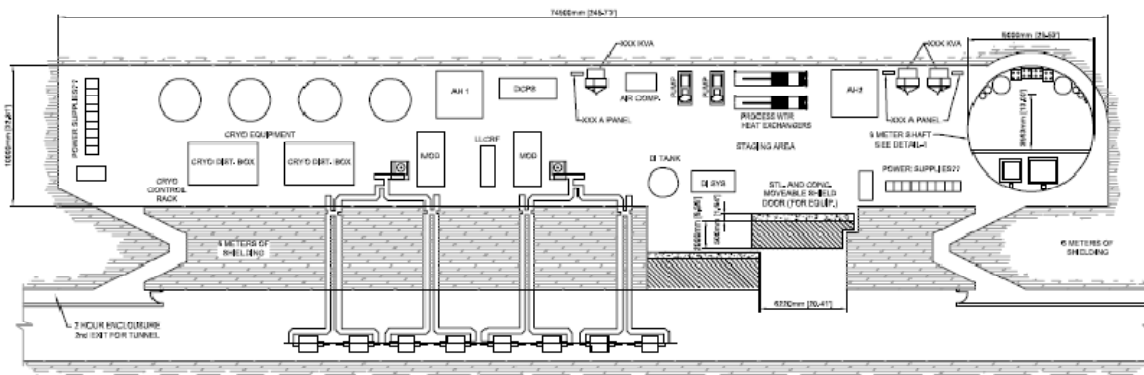


High Priority Requirements

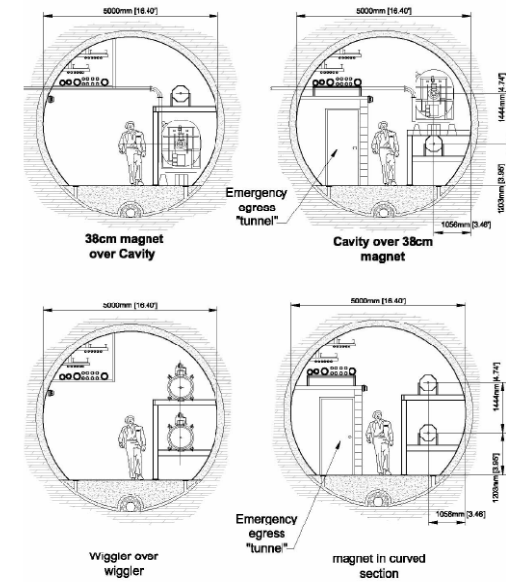
- **LCW loads and their locations (need Pressure drop and 1 of heat load/flow or heat load/delta T)**
- **Heat to air loads, including temperature stability requirements**
- **Chilled Water loads and distribution**
- **Temperature and Humidity Requirements**
- **Life Safety Analysis (CF&S Study)**



- In the RDR, the lattice (tunnel length and shape), tunnel size, shaft location and sizes were the cost drivers for establishing the budget estimate.
 - While the general configuration needs to be understood, details can wait.



PLAN - DAMPING RING CAVERNS @ RF
4 - REQUIRED @ SHAFTS 12, 13, 14 & 15





Other Requirements not Prioritized

- **Alignment Requirements**
- **Technical Equipment Spec Sheets**
- **Power Loads and Distribution Requirements**
- **Cryo Requirements (assuming Main Linac model that the Cryo group provides their primary cooling and power designs internal to their system)**



Damping Ring KOM

- **I will present what is included in the RDR. A description of the cost items, physical layouts, power and cooling loads used.**

However this review of the past is meant to start the discussion on the plan on how we will proceed.



Central Region Alternates

