Develop an understanding of the decision making culture within a power plant.

A typical plant has 4 key players:
1. Power Plant Operators
2. Engineering Specialists
3. Shift Supervisors
4. Operations Managers

Study the software and based on information acquired about the equipment, the Maintenance Team will take the following actions:
- Contact the Engineering Specialist responsible for that piece of equipment and request that they investigate an abnormality.

Fall 07 IPRO’s Objective
This semester’s IPRO objectives were to perform a “Day-in-the-Life” study for the two personnel categories most likely to use the SmartSignal product. The sponsor would like to know what daily activities are most important to these two individuals. What are their top priorities? Which tasks are most challenging and which are most cumbersome? Which software do they use on a regular basis? Are there certain tasks that have been made substantially easier through application of some software package? Going more to the equipment failure question, what is the lifecycle of a maintenance event? How is a potential issue identified? How is it flagged or logged for further investigation? If maintenance is warranted, how does it get prioritized against other maintenance needs? Who helps with this prioritization? Is there specific software used to track this maintenance lifecycle?

Research Methodology
In order to conduct the research, preferred method was by direct solicitation of information from plant personnel by conductions of interviews and plant tours.

The Questionnaire group develop, questions that would be asked of the key personnel during plant tours and interviews.

Contact group contacts various power plants to schedule interviews and tours.

After first few interviews, the questions were optimized to be able to acquire better information from target personnel.

After the accumulation of the interview data, common information and answers were extracted from these interviews.

The extracted information was quantified in order to show what are the major concerns that faced these the engineering specialists and shift supervisors, their daily activities and how they distribute the time during their work shifts.

Team Structure
The Team was divided into three main groups:
- **Questionnaire Group:** Responsible for design of interviews and deciding on what information needs to be extracted.
- **Contact Group:** Responsible for contacting various power plants and scheduling in person or telephone interviews.
- **Deliverables Group:** Responsible for creation and timely submission of all IPRO office deliverables.

Data Gathered

**Overall Interviews conducted: 13**
- **Engineering Specialist Interviews:** 8
- **Shift Supervisor Interviews:** 5

**Interview Findings**

**Engineering Specialists**
- Meetings
- Performance Reviews
- Generate work orders
- Prioritize Alerts

**Methods used to plan maintenance**
- Monthly meeting
- Pre Planned Outage Schedule
- Computer Software

**Failures information sorted**
- Print Tickets
- Log Book
- Alarm Trip Priority
- Equipment Failure
- Meetings

**Most difficult task related to planned maintenance**
- No Answer
- Planning Work by priority Level
- Design Changes
- Problem Identification

**Involvement in planned maintenance**
- What needs to be fixed
- Generate work orders
- Check on Progress
- Meet with contractors
- Root Cause Analysis
- Long Term Plan

**Life” study for the two personnel categories mostly likely to perform**

A Day-in-the-Life study for the two personnel categories most likely to use the SmartSignal product.
### IPRO 303: Information Design for Plant Management

**Fall 2007**  
**Illinois Institute of Technology**

**Conclusions**

Our primary finding was regarding:

**Engineering specialists:**
- Their main daily tasks were attending meetings, prioritizing maintenance alerts, and generating work orders, meeting with contractors, and scheduling planned maintenance tasks.
- They generally agree that the toughest part of maintenance is problem identification.
- They plan maintenance based on computer log information and a pre-planned outage schedule.
- They also are responsible for startup after an outage.

**Shift Supervisors:**
- Their main duty is to monitor plant operations during their 8-hour shifts maintaining a log of events and periodically monitor the control room.
- They are not involved in failure detection but may take an action during off-hours to avoid a safety hazard.
- They believe that the main problems faced with unplanned outages is production loss and detection of where the failure occurred.
- They commonly agree that the best method to detect equipment failure is early detection.