Use Case Specification Document

Use Case Specification - Login

Use Case ID: 0-0

Use Case Name: System Logon

Relevant Requirements: [Requirements Specification Document](file:///Users/anilshataveras/Library/Mobile%20Documents/com~apple~CloudDocs/CURRENT/CS%20401%20Java/pa3%20SRS%20Template.doc)

Primary Actor: Any User

Pre-conditions: User wants to log onto the system.

Post-conditions: User successfully logs onto the system with credentials specific to their access level.

Basic Flow or Main Scenario: User has three options of logging onto the system.

First Option- User has no permissions:

1. User logs in with valid credentials.
2. System responds by allowing the user to log on. The user will not have permissions to access anything.

Second Option- User is an Operator:

1. User logs on to Operator Account.
2. System responds by granting the user permissions accessed in the Operator level.

Third Option- User is a Supervisor:

1. User logs on to Supervisor Account.
2. System responds by granting the user permissions accessed in the Supervisor level.

Extensions or Alternate Flows: N/A

Exceptions: User does not have access to the login system:

1. User tries to log into the system with invalid entry.
2. System rejects the login.

Related Use Cases: 1-0, 1-1, 2-1, 2-2, 2-3

Use Case Specification- Log Access (Default)

Use Case ID: 1-0

Use Case Name: Default Log Access

Relevant Requirements: [Requirements Specification Document](file:///Users/anilshataveras/Library/Mobile%20Documents/com~apple~CloudDocs/CURRENT/CS%20401%20Java/pa3%20SRS%20Template.doc)

Primary Actor: N/A

Pre-conditions: User does not have a login or does not have operator/supervisor permissions.

Post-conditions: User will not have access to system logs.

Basic Flow or Main Scenario:

1. User attempts to access the system log.
2. System verifies users permission level.
3. If user does not have a valid permission level, the user will be denied access to system logs.

Extensions or Alternate Flows: N/A

Exceptions: N/A

Related Use Cases: 0-0

Use Case Specification- Log Access by Operator

Use Case ID: 1-1

Use Case Name: Log Access by Operator

Relevant Requirements: [Requirements Specification Document](file:///Users/anilshataveras/Library/Mobile%20Documents/com~apple~CloudDocs/CURRENT/CS%20401%20Java/pa3%20SRS%20Template.doc)

Primary Actor: Operator

Pre-conditions: User has logged in as an Operator

Post-conditions: User has access to system logs from the past 24 hours.

Basic Flow or Main Scenario:

1. User attempts to access the system log.
2. System responds by providing limited access of system logs from the past 24 hours.

Extensions or Alternate Flows: N/A

Exceptions:

1. User attempts to access system logs from longer than 24 hours.
2. System responds by denying access, as supervisor permissions are needed.

Related Use Cases: 0-0, 1-0

Use Case Specification- Log Access by Supervisor

Use Case ID: 1-2

Use Case Name: Log Access by Supervisor

Relevant Requirements: [Requirements Specification Document](file:///Users/anilshataveras/Library/Mobile%20Documents/com~apple~CloudDocs/CURRENT/CS%20401%20Java/pa3%20SRS%20Template.doc)

Primary Actor: Supervisor

Pre-conditions: User has logged into the system as a Supervisor

Post-conditions: User has the permissions set for Supervisors.

Basic Flow or Main Scenario:

1. User attempts to access the system logs
2. System responds by providing access to log data for the past 30 days.

Extensions or Alternate Flows: N/A

Exceptions: N/A

Related Use Cases: 0-0, 1-0

Use Case Specification- Sensors control Pumps

Use Case ID: 2-1

Use Case Name: Sensors Control Pumps

Relevant Requirements: [Requirements Specification Document](file:///Users/anilshataveras/Library/Mobile%20Documents/com~apple~CloudDocs/CURRENT/CS%20401%20Java/pa3%20SRS%20Template.doc)

Primary Actor: None

Pre-conditions: Sensors have control of the pumps. Pump control is not overridden.

Post-conditions: Pumps get controlled based off the readings from the sensors.

Basic Flow or Main Scenario:

Water Level Sensors:

1. The high water sensor detects that the water level has reached a maximum level and reports a flood risk.
2. The system responds by turning the pump on. The pump runs until the low water sensor reports a minimum level of water.
3. A log entry is created every time the pump is started or stopped by the sensor.

Methane Level Sensor:

1. The methane level sensor logs the levels of methane every 30 minutes.
2. Sensor reports any level of methane greater than the maximum amount set.
3. System shuts off the pump regardless of the water level.
4. Evacuation Alarm is triggered.
5. A log entry is created if the evacuation alarm is triggered by the methane sensor.

Extensions or Alternate Flows: N/A

Exceptions:

1. System is overwritten by Supervisor and needs to be reset.

Related Use Cases: 0-0

Use Case Specification- Operator Controls Pumps

Use Case ID: 2-2

Use Case Name: Operator Controls Pumps

Relevant Requirements: [Requirements Specification Document](file:///Users/anilshataveras/Library/Mobile%20Documents/com~apple~CloudDocs/CURRENT/CS%20401%20Java/pa3%20SRS%20Template.doc)

Primary Actor: Operator

Pre-conditions: User has Operator permissions.

Post-conditions: User has limited access to the pump control using the sensor data.

Basic Flow or Main Scenario:

1. User starts or stops the pump only if the water level is in between the low or high sensor limits.
2. System responds by checking the current water level and grants the request if the water level is in between the limits.
3. A log entry is created each time the pump is turned on or off.

Extensions or Alternate Flows: N/A

Exceptions:

Manual pump control:

1. User tries to start or stop the pump while the water level is not in between the minimum and maximum sensor limits.
2. The system responds by denying the request, as it requires being a supervisor.

Pump Reset:

1. User tries to reset the pump.
2. The system responds by denying the request, as it requires being a supervisor.

Related Use Cases: 0-0

Use Case Specification- Supervisor Controls Pumps

Use Case ID: 2-3

Use Case Name: Supervisor Controls Pumps

Relevant Requirements: [Requirements Specification Document](file:///Users/anilshataveras/Library/Mobile%20Documents/com~apple~CloudDocs/CURRENT/CS%20401%20Java/pa3%20SRS%20Template.doc)

Primary Actor: Supervisor

Pre-conditions: User has Supervisor permissions.

Post-conditions: User is able to control the pump system at any point, regardless of the data from the sensors. User can override minimum or maximum water levels set by the sensors.

Basic Flow or Main Scenario:

1. Supervisor manually starts or stops the pump.
2. System responds by turning the pump on/off.

Extensions or Alternate Flows:

1. Supervisor resets the pump.
2. System responds by resetting the pump to automatically trigger based off the sensors.

Exceptions: N/A

Related Use Cases: 0-0