

based life span, then a system that uses or relies on the failed equipment may still be unable to operate unless or until the alarm is responded to and the equipment repaired or replaced.

BRIEF DESCRIPTION

[0006] In one embodiment, a method (e.g., for monitoring equipment) includes monitoring one or more operational conditions of first equipment during operation of the first equipment and predicting a life span of the first equipment based on the one or more operational conditions. The life span that is predicted differs from a designated life span of the first equipment that is determined prior to operation of the first equipment.

[0007] In another embodiment, a system (e.g., an equipment monitoring system) includes a monitoring device configured to monitor one or more operational conditions of first equipment during operation of the first equipment and an analysis device configured to predict a life span of the first equipment based on the one or more operational conditions. The life span that is predicted differs from a designated life span of the first equipment that is determined prior to operation of the first equipment, wherein the analysis device is configured to automatically schedule one or more of repair or replacement of the first equipment by examining one or more previously generated schedules for one or more of repair or replacement of second equipment disposed along a route that the first equipment is disposed along, determining whether the one or more of repair or replacement of the second equipment is scheduled to occur after expiration of the life span of the first equipment that is predicted, and automatically modifying at least one of the previously generated schedules to include the one or more of repair or replacement of the first equipment with the one or more of repair or replacement of the second equipment.

[0008] In another embodiment, another method (e.g., for monitoring equipment) includes monitoring one or more operational conditions of first equipment during operation of the first equipment, predicting a life span of the first equipment based on the one or more operational conditions, examining one or more previously generated schedules for one or more of repair or replacement of second equipment disposed along a route that the first equipment is disposed

along, determining whether the one or more of repair or replacement of the second equipment is scheduled to occur after expiration of the life span of the first equipment that is predicted, and automatically modifying at least one of the previously generated schedules to include the one or more of repair or replacement of the first equipment with the one or more of repair or replacement of the second equipment.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] Reference is made to the accompanying drawings in which particular embodiments and further benefits of the inventive subject matter are illustrated as described in more detail in the description below, in which:

Claims:

1. A method comprising:

monitoring one or more operational conditions of first equipment during operation of the first equipment;

predicting a life span of the first equipment based on the one or more operational conditions;

examining one or more previously generated schedules for one or more of repair or replacement of second equipment disposed along a route that the first equipment is disposed along;

determining whether the one or more of repair or replacement of the second equipment is scheduled to occur after expiration of the life span of the first equipment that is predicted; and

automatically modifying at least one of the previously generated schedules to include one or more of repair or replacement of the first equipment with the one or more of repair or replacement of the second equipment.

2. The method of claim 1, wherein the life span that is predicted differs from a designated life span of the first equipment that is determined prior to operation of the first equipment.

3. The method of claim 1, wherein the one or more operational conditions of the first equipment include one or more of a number of charging and discharging cycles, a temperature, a humidity, a state of charging, a number of activation and deactivation cycles, or a number of lumen hours.

4. The method of claim 1 or 2, wherein the first equipment includes one or more of a battery, a relay, a solenoid, or a light bulb.

5. The method of any one of claims 1 to 4, further comprising generating one or more alarms responsive to a time in use of the first equipment coming within a designated period of time of the life span that is predicted.

6. The method of claim 5, wherein generating the one or more alarms includes generating at least one of an audible alarm or a visual alarm to instruct an operator to one or more of repair or replace the first equipment prior to reaching an end of the life span that is predicted.

7. The method of any one of claims 1 to 6, wherein the one or more of repair or replacement of the first equipment is scheduled responsive to a time in use of the first equipment coming within a designated period of time of the life span that is predicted.

8. A system comprising:

a monitoring device configured to monitor one or more operational conditions of first equipment during operation of the first equipment; and

an analysis device configured to predict a life span of the first equipment based on the one or more operational conditions, wherein the life span that is predicted differs from a designated life span of the first equipment that is determined prior to operation of the first equipment,

wherein the analysis device is configured to automatically schedule one or more of repair or replacement of the first equipment by examining one or more previously generated schedules for one or more of repair or replacement of second equipment disposed along a route that the first equipment is disposed along, determining whether the one or more of repair or replacement of the second equipment is scheduled to occur after expiration of the life span of the first equipment that is predicted, and automatically modifying at least one of the previously generated

schedules to include the one or more of repair or replacement of the first equipment with the one or more of repair or replacement of the second equipment.

9. The system of claim 8, wherein the one or more operational conditions of the first equipment include one or more of a number of charging and discharging cycles, a temperature, a humidity, a state of charging, a number of activation and deactivation cycles, or a number of lumen hours.

10. The system of claim 8 or 9, wherein the first equipment includes one or more of a battery, a relay, a solenoid, or a light bulb.

11. The system of any one of claims 8 to 10, further comprising an output device configured to generate one or more alarms responsive to a time in use of the first equipment coming within a designated period of time of the life span that is predicted.

12. The system of claim 11, wherein the output device is configured to generate the one or more alarms by generating at least one of an audible alarm or a visual alarm to instruct an operator to one or more of repair or replace the first equipment prior to reaching an end of the life span that is predicted.

13. The system of any one of claims 8 to 12, wherein the analysis device is configured to schedule the one or more of repair or replacement of the first equipment responsive to a time in use of the first equipment coming within a designated period of time of the life span that is predicted.