CLAIMS:

1. A method for visualizing effects of corrosion, the method comprising:

interrogating a workpiece (16) with radiation;

generating a backscatter image of the workpiece based upon radiation backscattered from the workpiece;

comparing one or more regions of the backscatter image of the workpiece with respective backscatter images of different metal loss indicators, each metal loss indicator representative of a different amount of metal loss; and

as a result of the comparing, estimating the metal loss attributable to corrosion of the workpiece.

2. A method according to Claim 1 wherein each metal loss indicator is representative of a different percentage of metal loss.

3. A method according to Claims 1-2 wherein the plurality of metal loss indicators are representative of respective percentages of metal loss that are more closely spaced for smaller percentages than for larger percentages.

4. A method according to Claims 1-3 wherein comparing one or more regions of the backscatter image of the workpiece with respective backscatter images of different metal loss indicators comprises comparing grey scale levels of the one or more regions of the backscatter image of the workpiece with grey scale levels of the respective backscatter images of different metal loss indicators.

5. A method according to Claims 1-4 wherein interrogating a workpiece with radiation comprises interrogating the workpiece with x-ray radiation.

6. A method according to Claims 1-5 further comprising generating the backscatter images of the different metal loss indicators.

7. A method according to Claims 1-6 wherein the workpiece is hidden and is interrogated without disassembly.

8. A system for visualizing effects of corrosion, the system comprising:

a backscatter imaging system configured to interrogate a workpiece (16) with radiation and to generate a backscatter image of the workpiece based upon radiation backscattered from the workpiece,

wherein the backscatter imaging system is also configured to generate respective backscatter images of different metal loss indicators with each metal loss indicator representative of a different amount of metal loss to permit a comparison of one or more regions of the backscatter image of the workpiece with the respective backscatter images of the different metal loss indicators for which the metal loss attributable to corrosion of the workpiece is estimatable.

9. A system according to Claim 8 wherein each metal loss indicator is representative of a different percentage of metal loss.

10. A system according to Claim 9 wherein the plurality of metal loss indicators are representative of respective

percentages of metal loss that are more closely spaced for smaller percentages than for larger percentages.

11. A system according to Claims 8-10 wherein the backscatter imaging system is configured to generate the backscatter image of the workpiece and the backscatter images of different metal loss indicators to permit a comparison of grey scale levels of the one or more regions of the backscatter image of the workpiece with grey scale levels of the respective backscatter images of different metal loss indicators.

12. A system according to Claims 8-11 wherein the backscatter imaging system comprises an x-ray source configured to interrogate the workpiece with x-ray radiation.

13. A system according to Claims 8-12 wherein the workpiece is hidden and is interrogated without disassembly.

14. A system for visualizing effects of corrosion, the system comprising:

A backscatter imaging system configured to interrogate a workpiece with radiation and to generate a backscatter image of the workpiece based upon radiation backscattered from the workpiece; and

a plurality of metal loss indicators, each metal loss indicator representative of a different amount of metal loss,

wherein the backscatter imaging system is also configured to generate respective backscatter images of different metal loss indicators to permit a comparison of one or more regions of the backscatter image of the workpiece with the respective backscatter images of the different metal loss indicators for

which the metal loss attributable to corrosion of the workpiece is estimatable.

15. A system according to Claim 14 wherein each metal loss indicator is representative of a different percentage of metal loss.

CLAIMS:

1. A method for visualizing effects of corrosion, the method comprising:

interrogating a workpiece with radiation;

generating a backscatter image of the workpiece based upon radiation backscattered from the workpiece;

comparing, with a processor, one or more regions of the backscatter image of the workpiece with each of a plurality of backscatter images of different respective metal loss indicators, each metal loss indicator being a physical representation of a different amount of metal loss, wherein comparing comprises determining which of the plurality of backscatter images of the different respective metal loss indicators match the one or more regions of the backscatter image of the workpiece by having colors or gray scale levels that are identical or within a predefined range of one another; and

as a result of the comparing, estimating, with the processor, the metal loss attributable to corrosion of the workpiece.

2. A method according to claim 1, wherein each metal loss indicator is representative of a different percentage of metal loss.

3. A method according to claim 2, wherein the plurality of metal loss indicators are representative of respective percentages of metal loss with the respective percentages being more closely spaced for smaller percentages than for larger percentages.

4. A method according to claim 1, wherein comparing one or more regions of the backscatter image of the workpiece with

each of the plurality of backscatter images of different respective metal loss indicators comprises comparing grey scale levels of the one or more regions of the backscatter image of the workpiece with grey scale levels of the respective backscatter images of different metal loss indicators.

5. A method according to claim 1, wherein interrogating a workpiece with radiation comprises interrogating the workpiece with x-ray radiation.

6. A method according to claim 1, further comprising generating the backscatter images of the different metal loss indicators.

7. A method according to claim 1, wherein the workpiece is hidden and is interrogated without disassembly.

8. A system for visualizing effects of corrosion, the system comprising:

a backscatter imaging system configured to interrogate a workpiece with radiation and to generate a backscatter image of the workpiece based upon radiation backscattered from the workpiece,

wherein the backscatter imaging system is also configured to generate respective backscatter images of different metal loss indicators with each metal loss indicator being a physical representation of a different amount of metal loss to permit a comparison of one or more regions of the backscatter image of the workpiece with each of a plurality of backscatter images of the different respective metal loss indicators for which the metal loss attributable to corrosion of the workpiece is estimable, and

wherein the backscatter imaging system comprises a processor and is further configured to determine which of the plurality of backscatter images of the different respective metal loss indicators match the one or more regions of the backscatter image of the workpiece by having colors or gray scale levels that are identical or within a predefined range of one another.

9. A system according to claim 8, wherein each metal loss indicator is representative of a different percentage of metal loss.

10. A system according to claim 9, wherein the plurality of metal loss indicators are representative of respective percentages of metal loss with the respective percentages being more closely spaced for smaller percentages than for larger percentages.

11. A system according to claim 8, wherein the backscatter imaging system is configured to generate the backscatter image of the workpiece and the backscatter images of different metal loss indicators to permit a comparison of grey scale levels of the one or more regions of the backscatter image of the workpiece with grey scale levels of the respective backscatter images of different metal loss indicators.

12. A system according to claim 8, wherein the backscatter imaging system comprises an x-ray source configured to interrogate the workpiece with x-ray radiation.

13. A system according to claim 8, wherein the workpiece is hidden and is interrogated without disassembly.

14. A system for visualizing effects of corrosion, the system comprising:

a backscatter imaging system configured to interrogate a workpiece with radiation and to generate a backscatter image of the workpiece based upon radiation backscattered from the workpiece; and

a plurality of metal loss indicators, each metal loss indicator being a physical representation of a different amount of metal loss,

wherein the backscatter imaging system is also configured to generate respective backscatter images of different metal loss indicators to permit a comparison of one or more regions of the backscatter image of the workpiece with each of a plurality of backscatter images of the different respective metal loss indicators for which the metal loss attributable to corrosion of the workpiece is estimable, and

wherein the backscatter imaging system comprises a processor and is further configured to determine which of the plurality of backscatter images of the different respective metal loss indicators match the one or more regions of the backscatter image of the workpiece by having colors or gray scale levels that are identical or within a predefined range of one another.

15. A system according to claim 14, wherein each metal loss indicator is representative of a different percentage of metal loss.

16. A system according to claim 15, wherein the plurality of metal loss indicators are representative of respective percentages of metal loss with the respective percentages being more closely spaced for smaller percentages than for larger percentages.

17. A system according to claim 14, wherein the backscatter imaging system is configured to generate the backscatter image of the workpiece and the backscatter images of different metal loss indicators to permit a comparison of grey scale levels of the one or more regions of the backscatter image of the workpiece with grey scale levels of the respective backscatter images of different metal loss indicators.

18. A system according to claim 14, wherein the backscatter imaging system comprises an x-ray source configured to interrogate the workpiece with x-ray radiation.

19. A system according to claim 14, wherein the workpiece is hidden and is interrogated without disassembly.