Claims:

1. A subsea wellhead assembly provided on a borehole, the assembly comprising:

a tree on wellhead housing;

tubing extending into the borehole;

casing circumscribing the tubing to form an annulus therebetween;

an annular member having a bore axially formed through a wall of the annular member and a portion circumscribed by the tree;

a borehole device;

an electrically conductive member disposed in the annular member bore and in electrical communication with the borehole device;

a connection having an end in electrical communication with the electrically conductive member, the connection comprising an annular ring connectable with a ring contact; and

a feed member in electrical communication with the end of the connection opposite the electrically conductive member, so that the feed member is in communication with the borehole device when the annular ring and ring contact are connected.

2. The subsea wellhead assembly of claim 1, further comprising a tubing hanger coaxially circumscribing the lower end of the annular member, a bore axially formed through the tubing hanger wall, an electrically conductive member in the tubing hanger bore, and a second connector having one end connected to the electrically conductive member in the tubing hanger bore and an opposite end connected to the electrically conductive member in the annular member bore.

3. The subsea wellhead assembly of claim 2, further comprising an upper groove formed in the tree and circumscribing the annular member, the upper groove having the annular ring therein and the ring contact being provided in the annular member.

4. The subsea wellhead assembly of claim 2, further comprising an upper groove formed in the annular member circumscribed by the tree, the upper groove having the annular ring therein and the ring contact being provided in the tree.

5. The subsea wellhead assembly of claim 1, wherein the ring contact comprises a plunger urged into contact with the annular ring by a resilient member.

6. The subsea wellhead assembly of claim 5 further comprising a bellows like sleeve circumscribing the plunger.

7. The subsea wellhead assembly of claim 1, further comprising a module connected to the feed member that is in communication with a remote location, so that the borehole device is in communication with the remote location.

8. The subsea wellhead assembly of claim 1 wherein the annular member comprises a tubing hanger.

9. The subsea wellhead assembly of claim 8, further comprising a recess in the tubing hanger outer surface, an extendable plunger in the recess that is in electrical communication with the borehole device, a groove in the tree circumscribing the tubing hanger, and the annular ring in the groove, so that extending the plunger from the recess contacts the annular ring and electrically communicates the feed member with the borehole device.

10. The subsea wellhead assembly of claim 1, wherein the borehole device is selected from the list consisting of a downhole sensor, a downhole valve, and a downhole choke.

11. A subsea wellhead assembly comprising:

a production bore axially formed through the wellhead assembly and in communication with a borehole;

a wellhead housing;

a tree provided on the wellhead housing;

an annular tubular coaxial with the bore and landed within the tree;

a bore formed axially through a wall of the annular tubular;

an electrically conductive element in the annular member bore;

a passage in the tree having an electrically conductive feed line in communication with a control facility;

a device in the borehole in electrical communication with the element in the annular member bore; and

a connector assembly comprising an annular ring, a ring contact in selective electrical contact with the annular ring, a first end electrically connected to the feed line, and a second end electrically connected to the conductive element, so that selectively contacting the annular ring and the ring contact defines a control circuit comprising the device, the electrically conductive element, the connector assembly, and the electrically conductive feed line.

12. The subsea wellhead assembly of claim 11, wherein the annular tubular comprises a tubing hanger, the assembly further comprising production tubing depending from the tubing hanger into the borehole, casing depending into the borehole circumscribing the production tubing to define an annulus between the casing and the production tubing, and an electrically conductive element in the annulus connected on one end to the

device and on the other end to the electrically conductive element in the annular member bore.

13. The subsea wellhead assembly of claim 11, further comprising a groove in the tree circumscribing the annular tubular and a recess in the annular member formed to face the groove when the annular tubular is landed in the tree, wherein the annular ring is disposed in the groove and the ring contact is in the recess.

14. The subsea wellhead assembly of claim 11, wherein the device is selected from the list consisting of a sensor, a valve and a choke.

15. A wellhead assembly for producing hydrocarbons from a subsea wellbore, the assembly comprising:

a wellhead housing anchored on the sea floor over the wellbore;

a tree connected to the wellhead housing;

a first passage formed through the tree;

a first electrically conductive element in the first passage in communication with a remotely located control facility;

a production bore axially provided through the wellhead housing and tree in communication with the wellbore;

a tubular stab member in the production bore and extending from within the tree to within the wellhead housing;

a second passage provided in the stab member wall;

a second electrically conductive element in the first passage;

a tubing hanger circumscribing a lower portion of the stab member;

a third passage formed axially through the tubing hanger wall;

tubing depending from the tubing hanger into the wellbore coaxially within casing in the wellbore to define an annulus between the tubing and the casing;

a wellbore device in the tubing;

a third electrically conductive element provided in the third passage, into the annulus, and connected to the device;

a first connector comprising an annularly shaped conductor, a ring contact in selective electrically communication with the annularly shaped conductor, an upper end connected to the first electrically conductive element, and a lower end connected to the second electrically conductive element; and

a second connector comprising an annularly shaped conductor, a ring contact in selective electrically communication with the annularly shaped

conductor, an upper end connected to the second electrically conductive element, and a lower end connected to the third electrically conductive element.

16. The wellhead assembly of claim 15 further comprising an upper groove in the tree circumscribing the stab member and a lower groove in the tubing hanger circumscribing the stab member, wherein the annularly shaped conductor of the first connector is in the upper groove and the annularly shaped conductor of the second connector is in the lower groove.

17. The wellhead assembly of claim 15, wherein the first electrically conductive element contacts the upper connector at a first position and the second electrically conductive element contacts the upper connector at a second position, wherein the first and second positions are at different angular locations about the production bore axis.

CLAIMS

1. A subsea wellhead assembly provided on a borehole, the assembly comprising:

a tree on a wellhead housing;

tubing extending into the borehole;

casing circumscribing the tubing to form an annulus therebetween;

an annular member having a portion circumscribed by the tree;

a bore axially formed through a wall of the annular member;

an electrically conductive member disposed in the annular member bore and in electrical communication with a device disposed in the borehole;

a connection having an end in electrical communication with the electrically conductive member, the connection comprising an annular ring connectable with a ring contact;

a tubing hanger coaxially circumscribing the lower end of the annular member;

a bore axially formed through a wall of the tubing hanger;

an electrically conductive member in the bore in the wall of the tubing hanger;

a second connector having one end connected to the electrically conductive member in the bore of the tubing hanger and an opposite end connected to the electrically conductive member in the annular member bore; and

a feed member in electrical communication with the end of the connection opposite the electrically conductive member, so that the feed member is in communication with the borehole device when the annular ring and ring contact are connected.

2. The subsea wellhead assembly of claim **1**, further comprising an upper groove formed in the tree and circumscribing the annular member, the upper groove having the annular ring therein and the ring contact being provided in the annular member.

3. The subsea wellhead assembly of claim **1**, further comprising an upper groove formed in the annular member circumscribed by the tree, the upper groove having the annular ring therein and the ring contact being provided in the tree.

4. The subsea wellhead assembly of claim **1**, wherein the ring contact comprises a plunger urged into contact with the annular ring by a resilient member.

5. The subsea wellhead assembly of claim **4**, further comprising a bellows like sleeve circumscribing the plunger.

6. The subsea wellhead assembly of claim **1**, further comprising a module connected to the feed member that is in communication with a remote location, so that the borehole device is in communication with the remote location.

7. The subsea wellhead assembly of claim **1**, further comprising a recess in the tubing hanger outer surface, an extendable plunger in the recess that is in electrical communication with the borehole device, a groove in the tree circumscribing the tubing hanger, and the annular ring in the groove, so that extending the plunger from the recess contacts the annular ring and electrically communicates the feed member with the borehole device.

8. The subsea wellhead assembly of claim **1**, wherein the borehole device is selected from the list consisting of a downhole sensor, a downhole valve, and a downhole choke.

9. A subsea wellhead assembly comprising:

a production bore axially formed through the wellhead assembly and in communication with a borehole;

a wellhead housing;

a tree provided on the wellhead housing;

an annular tubular coaxial with the bore and landed within the tree;

a tubing hanger in the tree circumscribing a portion of the annular tubular;

a bore formed axially through a wall of the annular tubular;

a passage axially extending in a wall of the tubing hanger having an electrically conductive element provided therein;

an electrically conductive element in the bore in the annular tubular in electrical communication with the electrically conductive element in the passage in the tubing hanger;

a passage in the tree having an electrically conductive feed line in communication with a control facility; and

a connector assembly comprising an annular ring, a ring contact in selective electrical contact with the annular ring, a first end electrically connected to the feed line, and a second end electrically connected to the electrically conductive element, so that selectively contacting the annular ring and the ring contact defines a control circuit comprising the electrically conductive element in the passage in the tubing hanger, the electrically conductive element in the bore in the annular tubular, the connector assembly, and the electrically conductive feed line.

10. The subsea wellhead assembly of claim **9**, further comprising production tubing depending from the tubing hanger into the borehole, casing depending into the borehole circumscribing the production tubing to define an annulus between the casing and the production tubing, and the electrically conductive element in the passage in the tubing hanger extending into the annulus connected on one end to a device in the borehole and on the other end to the electrically conductive element in the bore in the annular tubular.

11. The subsea wellhead assembly of claim **9**, further comprising a groove in the tree circumscribing the annular tubular and a recess in the annular tubular formed to face the groove when the annular tubular is landed in the tree, wherein the annular ring is disposed in the groove and the ring contact is in the recess.

12. The subsea wellhead assembly of claim **10**, wherein the device is selected from the list consisting of a sensor, a valve and a choke.

13. A wellhead assembly for producing hydrocarbons from a subsea wellbore, the assembly comprising:

a wellhead housing anchored on the sea floor over the wellbore;

a tree connected to the wellhead housing;
a first passage formed through the tree;
a first electrically conductive element in the first passage in communication with a remotely located control facility;
a production bore axially provided through the wellhead housing and tree in communication with the wellbore;
a tubular stab member in the production bore and extending from within the tree to within the wellhead housing;
a second passage provided in the stab member wall;
a second electrically conductive element in the second passage;
a tubing hanger circumscribing a lower portion of the stab member;
a third passage formed axially through the tubing hanger wall;
tubing depending from the tubing hanger into the wellbore coaxially within casing in the wellbore to define an annulus between the tubing and the casing;
a wellbore device in the tubing;
a third electrically conductive element provided in the third passage, into the annulus, and connected to the device;
a first connector comprising an annularly shaped conductor, a ring contact in selective electrically communication with the annularly shaped conductor, an upper end connected to the first electrically conductive element, and a lower end connected to the second electrically conductive element; and
a second connector comprising an annularly shaped conductor, a ring contact in selective electrically communication with the annularly shaped conductor, an upper end connected to the second electrically conductive element, and a lower end connected to the third electrically conductive element.

14. The wellhead assembly of claim **13**, further comprising an upper groove in the tree circumscribing the stab member and a lower groove in the tubing hanger circumscribing the stab member, wherein the annularly shaped conductor of the first connector is in the upper groove and the annularly shaped conductor of the second connector is in the lower groove.

15. The wellhead assembly of claim **13**, wherein the first electrically conductive element contacts the upper connector at a first position and the second electrically conductive element contacts the upper connector at a second position, wherein the first and second positions are at different angular locations about the production bore axis.