What is claimed:

1. A blowout preventer stack comprising:

   a ram movable from a first position to a second position; and ,

   a laser cutter for emitting a laser beam defining a beam path positioned relative to the ram and facing a cavity formed within the stack, wherein the beam path enters into the cavity and the second position is located within the cavity.

2. The blowout prevent stack of claim 1, further comprising a ram preventer, wherein the ram preventer is a shear ram assembly and the stack further comprises:

   a. an annular preventer assembly;

   b. a pipe ram assembly; and,

   c. the annular preventer assembly, shear ram assembly and pipe ram assembly share the cavity, the cavity having an axis.

3. The blowout preventer stack of claim 2, wherein the beam path intersects the axis of the cavity.

4. The blowout preventer of claim 2, comprising a laser cutter shield located adjacent to the cavity, wherein the laser cutter shield protects the laser cutter from damage, while not appreciably interfering with the movement of tubulars through the cavity.

5. A blowout preventer comprising:

   a. a laser cutter;

   b. a ram preventer comprising a pair of opposing rams;

   c. a cavity within a stack for passing tubulars therethrough;

   d. the laser cutter having a beam path;

   e. the rams capable of movement into the cavity;

f. an area within the cavity for engagement of the rams with a tubular; and,

g. the beam path positioned between the laser cutter and the area within the cavity for engagement of the rams with the tubular.

6. A laser assisted blowout preventer comprising:

a. an annular preventer;

b. a pipe ram assembly; and,

c. a laser shear ram assembly comprising:

i. a ram movable from a first position to a second position; and,

ii. a laser cutter positioned relative to the ram and facing a cavity formed within the laser assisted blowout preventer, wherein the laser cutter emits a laser beam that defines a laser cutter beam path that enters into the cavity and the second position is located within the cavity.

7. The laser assisted blowout preventer of claim 6, wherein the blowout preventer is a subsea blowout preventer comprising: a shear ram assembly and a second pipe ram assembly; wherein the annular preventer, laser shear ram assembly, shear ram assembly, pipe ram assembly and second pipe ram assembly form a stack of components.

8. The laser assisted blowout preventer of claim 6, wherein the laser cutter beam path extends toward a center axis of the cavity.

9. The laser assisted blowout preventer of claim 6, wherein the laser cutter is capable of at least partially orbiting an axis of the cavity while firing the laser beam.

10. The laser assisted blowout preventer of claim 9, wherein it takes about 1/2 of an orbit to complete a cut of a tubular.

11. The laser assisted blowout preventer of claim 9, wherein it takes about 1/3 of an orbit to complete a cut of a tubular.

12. The laser assisted blowout preventer of claim 9 wherein it takes about 1/4 of an orbit to complete a cut of a tubular.

13. The laser assisted blowout preventer of claim 6, comprising: a second cutter that emits a second laser beam that defines a second laser cutter beam path, wherein the cavity is substantially circular; and each of the laser cutter and the second laser cutter is adjacent to but not in the cavity, and the laser cutter beam path and the second laser cutter beam path are configured in a spoke like configuration.

14. A laser assisted blowout preventer comprising:

a. a frame;

b. a blowout preventer stack associated with the frame, the blowout preventer stack comprising;

i. a cavity formed within the blowout preventer for passing tubulars therethrough; and,

ii. a laser delivery assembly positioned outside of the cavity when not activated.

15. The laser assisted blowout preventer of claim 14, wherein the laser delivery assembly comprises:

a. a laser cutter having a beam path associated therewith;

b. the laser cutter integral with a shear ram; and

c. the beam path directed into the cavity.

16. The laser assisted blowout preventer of claim 14, wherein the cavity for passing tubulars therethrough has a vertical axis, and the laser delivery assembly comprises:

a. a first laser cutter having a first beam path directed toward the cavity;

b. a second laser cutter having a second beam path directed toward the cavity;

c. at least one of the first or second laser cutters contained in a shear ram; and,

d. at least one of the first or second beam paths directed toward the vertical axis.

17. A laser assisted subsea blowout preventer drilling system, the system comprising:

a. a subsea riser;

b. a blowout preventer stack comprising:

i. a cavity for passing tubulars through the blowout preventer stack, wherein the cavity is in mechanical communication with the subsea riser, wherein tubulars can be passed to and from the subsea riser into the cavity for the purpose of advancing a borehole;

ii. a laser delivery assembly;

iii. a shear ram assembly, wherein the laser delivery assembly is optically and mechanically associated with the shear ram assembly;

c. whereby, upon activation the laser delivery system delivers a high power laser beam to a tubular within the blowout preventer cavity resulting in cutting the tubular to reduce the risk that the tubular would prevent the closing of the shear ram assembly.

18. The laser assisted subsea blowout preventer drilling system of claim 17, wherein the high power laser beam forms a laser delivery pattern to sever the tubular in the blowout preventer cavity.

19. The laser assisted subsea blowout preventer drilling system of claim 17, wherein the high power laser beam forms a laser delivery pattern to weaken the tubular in the blowout preventer cavity.

20. The laser assisted subsea blowout preventer drilling system of claim 17, wherein the high power laser beam forms a laser delivery pattern to remove two discrete areas of the tubular.

21. A laser shear ram assembly comprising:

a. a body;

b. the body defining a cavity that has a vertical axis, whereby the cavity is capable of receiving a tubular for advancing or removing the tubular from a borehole;

c. a first shear ram having a first piston assembly, whereby the first piston assembly is capable of moving the first shear ram into the cavity of the body upon activation of the first piston assembly;

d. a second shear ram having a second piston assembly, whereby the second piston assembly is capable of moving the second shear ram into the cavity of the body upon activation of the second piston assembly; and,

e. a laser delivery assembly, whereby when activated the laser delivery assembly is capable of propagating a laser beam into the cavity.

22. The laser shear ram assembly of claim 21, wherein the laser delivery assembly comprises a means for delivering a predetermined laser beam pattern to the tubular.

23. An offshore drilling rig having a laser assisted subsea blowout preventer system for the rapid cutting of tubulars in the blowout preventer during emergency situations, the laser system comprising:

a. a riser capable of being lowered from and operably connected to an offshore drilling rig to a depth at or near a seafloor;

b. a blowout preventer capable of being operably connected to the riser and lowered by the riser from the offshore drilling rig to the seafloor;

c. a high power laser beam source, having a power of at least about 15 kW, in optical communication with a laser cutter; and,

d. the laser cutter operably associated with the blowout preventer and riser, whereby the laser cutter is capable of being lowered to at or near the seafloor and upon activation delivering a high power laser beam to a tubular that is within the blowout preventer.

24. An offshore drilling rig having a laser assisted subsea blowout preventer system for the rapid cutting of tubulars in the blowout preventer during emergency situations, the laser system comprising:

a. a riser positioned at a depth at or near a seafloor, wherein the riser is operably connected to an offshore drilling rig;

b. a blowout preventer positioned at or near the seafloor, wherein the blowout preventer is operably connected to the riser;

c. a high power laser in optical communication with a laser cutter; and,

d. the laser cutter operably associated with the blowout preventer and riser and positioned at or near the seafloor, whereby upon activation the laser cutter delivers a high power laser beam to a tubular that is within the blowout preventer.

25. An offshore drilling rig having a laser assisted subsea blowout drilling system, the system comprising:

a. a riser capable of being lowered from and operably connected to an offshore drilling rig to a depth at or near a seafloor;

b. a blowout preventer capable of being operably connected to the riser and lowered by the riser from the offshore drilling rig to the seafloor;

c. the blowout preventer comprising a shear ram capable of mechanically interacting with an area of a tubular that is within the blowout preventer;

d. the shear ram being associated with a laser cutter;

e. a high power laser beam source, having a power of at least about 5 kW, in optical communication with the laser cutter; and,

f. the laser cutter operably associated with the blowout preventer and riser, whereby the laser cutter is capable of being lowered to at or near the seafloor and upon activation delivering a high power laser beam to the tubular that is within the blowout preventer and to an area on the tubular that is at or near the area of mechanical interaction with the shear ram.

26. A subsea blowout preventer stack comprising: a ram and a laser cutter positioned within the stack; the laser cutter having a means to deliver a predetermined laser beam cutting pattern; whereby the predetermined laser beam cutting pattern corresponds to an area of a tubular to be removed within the stack.

27. A method drilling subsea wells by using a laser assisted blowout preventer and riser, the method comprising:

a. lowering a laser assisted blowout preventer having a first inner cavity from an offshore drilling rig to a seafloor using a riser having a second inner cavity, the seafloor having a borehole;

b. securing the blowout preventer to the borehole, whereby the borehole, the first inner cavity and the second inner cavity are in fluid and mechanical communication; and,

c. advancing the borehole by lowering tubulars from the offshore drilling rig down through the second inner cavity, the first inner cavity and into the borehole;

d. wherein, the laser assisted blowout preventer has the capability to perform laser cutting of a tubular present in the first inner cavity.

28. The method of claim 27, wherein the laser assisted blowout preventer comprises:

a. a frame;

b. a blowout preventer stack associated with the frame;

c. the blowout preventer stack comprising a third cavity for passing tubulars therethrough, which third cavity is at least a part the first cavity; and,

d. the blowout preventer stack comprising a laser delivery assembly, wherein the laser delivery assembly is positioned outside of the first and third cavities when not activated.

What is claimed:

1. A blowout preventer stack comprising:

   A ram movable from a first position to a second position, thereby defining a ram path;

   A laser cutter for emitting a high power laser beam defining a laser beam path; wherein the high power laser beam has at least about 1 kW of power;

   The laser cutter positioned relative to the ram and facing a pressure containment cavity formed within the blowout preventer stack, whereby the laser beam path is adjacent the ram path, and wherein the beam path enters into the pressure containment cavity and the second position is located within the pressure containment cavity.

2. A blowout preventer stack comprising:

   A ram preventer;

   The blowout preventer stack defining a pressure containment cavity; and

   The ram preventer comprising a high power laser cutter, for emitting a high power laser beam defining a laser beam path, wherein the high power laser beam has at least about 1 kW of power; and, the pressure containment cavity having an axis.

3. The blowout prevent stack of claim 2, wherein the ram preventer is a shear ram assembly and the stack comprises:

   a. an annular preventer assembly;

   b. a pipe ram assembly; and,

   c. the annular preventer assembly, shear ram assembly and pipe ram assembly define at least a portion of the pressure containment cavity.

4. The blowout preventer stack of claim 3, wherein the laser beam path is directed toward the axis of the pressure containment cavity.

5. The blowout preventer stack of claim 3, wherein the beam path is directed towards the pressure containment cavity.

6. The blowout preventer stack of claim 3, wherein the beam path intersects the axis of the pressure containment cavity.

7. The blowout preventer of claim 3, comprising a laser cutter shield located adjacent to the pressure containment cavity, wherein the laser cutter shield protects the laser cutter from damage, while not appreciably interfering with the movement of tubulars through the cavity.

8. A blowout preventer comprising:

    a. A laser cutter for emitting a high power laser beam, wherein the high power laser beam has at least about 1 kW of power;

    b. A ram preventer comprising opposing rams;

    c. A pressure containment cavity within a stack for passing tubulars therethrough;

    d. The laser cutter having a beam path;

    e. The opposing rams capable of movement into the pressure containment cavity;

    f. An area within the pressure containment cavity for engagement of the opposing rams with a tubular; and,

    g. The beam path positioned in the area within the pressure containment cavity for engagement of the opposing rams with the tubular.

9. A subsea blowout preventer comprising:

    a. A laser cutter for emitting a high power laser beam, wherein the high power laser beam has at least about 1 kW of power;

    b. A ram preventer, having a ram;

    c. A pressure containment cavity for passing tubulars therethrough;

    d. The laser cutter having a beam path;

    e. The ram capable of movement into the pressure containment cavity;

f. An area within the pressure containment cavity for engagement of the ram with a tubular; and,

g. The beam path directed adjacent to the area within the pressure containment cavity for engagement of the ram with the tubular.

10. A laser assisted blowout preventer comprising:

a. An annular preventer;

b. A pipe ram assembly; and,

c. A laser shear ram assembly comprising:

i. A ram movable from a first position to a second position; and,

ii. A laser cutter adjacent a pressure containment cavity formed within the laser assisted blowout preventer, wherein the laser cutter emits a high power laser beam that defines a laser beam path, wherein the high power laser beam has at least about 1 kW of power; the laser cutter positioned in the laser shear ram assembly, wherein the laser beam path enters into the pressure containment cavity and the second ram position is located within the pressure containment cavity.

11. The laser assisted blowout preventer of claim 10, wherein the blowout preventer is a subsea blowout preventer comprising: a shear ram assembly and a second pipe ram assembly; wherein the annular preventer, laser shear ram assembly, shear ram assembly, pipe ram assembly and second pipe ram assembly form a stack of components.

12. The laser assisted blowout preventer of claim 10, wherein the laser beam path extends toward a center axis of the pressure containment cavity.

13. The laser assisted blowout preventer of claim 10, wherein the pressure containment cavity has a vertical axis and the laser beam path forms an acute angle with the vertical axis.

14. The laser assisted blowout preventer of claim 10, wherein the pressure containment cavity has a vertical axis and the laser beam path that forms an obtuse angle with the vertical axis.

15. The laser assisted blowout preventer of claim 10, wherein the pressure containment cavity has a vertical axis and the laser beam path forms about a 90 degree angle with the vertical axis.

16. The laser assisted blowout preventer of claim 10, wherein the laser shear ram assembly comprises:

    a. a body having the pressure containment cavity for passing tubulars therethrough;

    b. the pressure containment cavity having a wall and a center axis; and

    c. the laser cutter positioned prior to activation within the body of the laser shear ram assembly, adjacent the pressure containment cavity wall, and outside of the pressure containment cavity.

17. The laser assisted blowout preventer of claim 10, wherein the laser cutter is capable of at least partially orbiting an axis of the pressure containment cavity while firing the laser beam.

18. The laser assisted blowout preventer of claim 17, comprising a second laser cutter.

19. The laser assisted blowout preventer of claim 17, wherein it takes about 1/2 of an orbit to complete a cut of a tubular.

20. The laser assisted blowout preventer of claim 17, wherein it takes about 1/3 of an orbit to complete a cut of a tubular.

21. The laser assisted blowout preventer of claim 17, wherein it takes about 1/4 of an orbit to complete a cut of a tubular.

22. The laser assisted blowout preventer of claim 10, wherein the laser cutter is contained in the ram.

23. The laser assisted blowout preventer of claim 10, wherein the ram has a path of travel for movement of the ram from the first position to the second position thereby defining a ram path.

24. The laser assisted blowout preventer of claim 23, wherein the laser beam path is transverse to the ram path.

25. The laser assisted blowout preventer of claim 23, wherein the laser beam path is parallel to the ram path.

26. The laser assisted blowout preventer of claim 10, comprising: a second laser cutter that emits a second laser beam that defines a second laser beam path, wherein the pressure containment cavity is substantially circular defining a center axis; and each of the laser cutter and the second laser cutter is adjacent to but not in the pressure containment cavity, and the laser beam path and the second laser beam path intersect the center axis of the pressure containment cavity.

27. A laser assisted blowout preventer comprising:

    a. A frame;

    b. A blowout preventer stack mechanically associated with the frame, whereby the frame at least in part encompasses and protects the blowout preventer stack, the blowout preventer stack comprising;

        i. A pressure containment cavity formed within the blowout preventer stack for passing tubulars therethrough; and,

        ii. A high power laser delivery assembly positioned outside of the pressure containment cavity when not activated, wherein the high power laser delivery assembly delivers a high power laser beam, wherein the high power laser beam has at least about 1 kW of power.

28. The laser assisted blowout preventer of claim 27, wherein the laser delivery assembly comprises:

    a. a laser cutter having a laser beam path;

b. the laser cutter integral with a shear ram; and

c. the laser beam path directed into the pressure containment cavity.

29. The laser assisted blowout preventer of claim 27, wherein the pressure containment cavity for passing tubulars therethrough has a vertical axis, and the laser delivery assembly comprises:

a. a first laser cutter having a first beam path directed toward the pressure containment cavity;

b. a second laser cutter having a second beam path directed toward the pressure containment cavity;

c. at least one of the first or second laser cutters contained in a shear ram; and,

d. at least one of the first or second beam paths directed toward the vertical axis.

30. The laser assisted blowout preventer of claim 27, wherein the laser delivery assembly comprises:

a. a plurality of laser cutters each having a beam path;

b. at least one of the plurality of laser cutters mechanically associated with a shear ram, wherein the shear ram is contained within the blowout preventer stack, wherein the blowout preventer stack has an area within the pressure containment cavity for engagement with a tubular by the shear ram; and,

c. at least one of the beam paths is directed toward the area within the pressure containment cavity for engagement with a tubular by the shear ram.

31. A laser assisted subsea blowout preventer drilling system, the system comprising:

a. A subsea riser;

b. A blowout preventer stack comprising:

i. A pressure containment cavity for passing tubulars through the blowout preventer stack, wherein the pressure containment cavity is in mechanical association and in fluid communication with the subsea riser, whereby tubulars can be passed to and from the subsea riser into the pressure containment cavity for the purpose of advancing a borehole;

ii. A laser delivery assembly;

iii. A shear ram assembly, wherein the laser delivery assembly is optically and mechanically associated with the shear ram assembly;

c. Whereby, upon activation the laser delivery assembly delivers a high power laser beam to a tubular within the pressure containment cavity resulting in cutting the tubular to reduce the risk that the tubular would prevent the closing of the shear ram assembly, wherein the high power laser beam has at least about 1 kW of power.

32. The laser assisted subsea blowout preventer drilling system of claim 31, wherein the high power laser beam forms a laser delivery pattern to sever the tubular in the blowout preventer cavity.

33. The laser assisted subsea blowout preventer drilling system of claim 31, wherein the high power laser beam forms a laser delivery pattern to weaken the tubular in the pressure containment cavity.

34. The laser assisted subsea blowout preventer drilling system of claim 31, wherein the high power laser beam forms a laser delivery pattern to remove a first and a second area of the tubular, wherein the first and second areas are discrete.

35. A laser assisted subsea blowout preventer drilling system, the system comprising:

a. A subsea riser;

b. A blowout preventer stack, comprising;

i. A blowout preventer cavity for passing tubulars therethrough, wherein the blowout preventer cavity is in fluid communication and mechanical association with the subsea riser, wherein tubulars can be passed from the subsea riser into the blowout preventer cavity and drilling fluids can be passed from the blowout preventer cavity to the subsea riser,

ii. A laser delivery assembly;

iii. A shear ram assembly having an opposed pair of shear rams, wherein the laser delivery assembly is optically and mechanically associated with at least one of the opposed pair of shear rams, whereby upon activation the laser delivery assembly delivers a high power laser beam to a tubular within the blowout preventer cavity resulting in the cutting of the tubular to assist the closing of the shear ram assembly, wherein the high power laser beam has at least about 1 kW of power.

36. The laser assisted subsea blowout preventer drilling system of claim 35, comprising a laser delivery pattern configured to sever the tubular in the blowout preventer cavity.

37. The laser assisted subsea blowout preventer drilling system of claim 35, comprising a laser delivery pattern configured to weaken the tubular in the blowout preventer cavity.

38. The laser assisted subsea blowout preventer drilling system of claim 35, comprising a laser delivery pattern configured to remove a first and a second area of the tubular, wherein the first and second areas are discrete.

39. A laser assisted subsea blowout preventer drilling system, the system comprising:

a. A subsea riser;

b. A blowout preventer stack;

c. The blowout preventer stack comprising:

a. A blowout preventer stack cavity for passing tubulars therethrough, wherein the blowout preventer stack cavity is in fluid communication with the subsea riser;

b. A laser delivery assembly for providing a high power laser beam, wherein the high power laser beam has at least about 1 kW of power; and,

c. A shear ram assembly having an opposed pair of shear rams, wherein the laser delivery assembly is mechanically associated with the shear ram assembly.

40. The subsea blowout preventer of claim 39, comprising a shield to protect the laser delivery assembly from drilling fluids.

41. A laser shear ram assembly comprising:

a. A body;

b. The body defining a pressure containment cavity that has a vertical axis, whereby the pressure containment cavity is capable of receiving a tubular for advancing or removing the tubular from a borehole;

c. A first shear ram having a first piston assembly, whereby the first piston assembly is capable of moving the first shear ram into the pressure containment cavity of the body upon activation of the first piston assembly;

d. A second shear ram having a second piston assembly, whereby the second piston assembly is capable of moving the second shear ram into the pressure containment cavity of the body upon activation of the second piston assembly; and,

e. A laser delivery assembly, whereby when activated the laser delivery assembly is capable of propagating a high power laser beam into the pressure containment cavity, wherein the high power laser beam has at least about 1 kW of power.

42. The laser shear ram assembly of claim 41, wherein the laser delivery assembly comprises a means for delivering a predetermined laser beam pattern to the tubular.

43. The laser shear ram assembly of claim 42, wherein the predetermined laser beam delivery pattern comprises two areas of removal of the tubular.

44. The laser shear ram assembly of claim 42, wherein the predetermined laser beam delivery pattern comprises a plurality of parallel areas of removal of the tubular.

45. An offshore drilling rig having a laser assisted subsea blowout preventer system for the rapid cutting of tubulars in the blowout preventer during emergency situations, the laser system comprising:

    a. A riser capable of being lowered from and operably connected to an offshore drilling rig to a depth at or near a seafloor;

    b. A blowout preventer capable of being operably connected to the riser and lowered by the riser from the offshore drilling rig to the seafloor;

    c. A high power laser in optical communication with a laser cutter; and,

    d. The laser cutter operably associated with the blowout preventer and riser, whereby the laser cutter is capable of being lowered to at or near the seafloor and upon activation delivering a high power laser beam to a tubular that is within the blowout preventer, wherein the high power laser beam has at least about 1 kW of power.

46. An offshore drilling rig having a laser assisted subsea blowout preventer system for the rapid cutting of tubulars in the blowout preventer during emergency situations, the laser system comprising:

    a. A riser positioned at a depth at or near a seafloor, wherein the riser is operably connected to an offshore drilling rig;

    b. A blowout preventer positioned at or near the seafloor, wherein the blowout preventer is operably connected to the riser;

    c. A high power laser in optical communication with a laser cutter; and,

d. The laser cutter operably associated with the blowout preventer and riser and positioned at or near the seafloor, whereby upon activation the laser cutter delivers a high power laser beam to a tubular that is within the blowout preventer, wherein the high power laser beam has at least about 1 kW of power.

47. An offshore drilling rig having a laser assisted subsea blowout drilling system, the system comprising:

a. A riser capable of being lowered from and operably connected to an offshore drilling rig to a depth at or near a seafloor;

b. A blowout preventer capable of being operably connected to the riser and lowered by the riser from the offshore drilling rig to the seafloor;

c. The blowout preventer comprising a shear ram capable of mechanically interacting with an area of a tubular that is within the blowout preventer;

d. The shear ram being operably associated with a laser cutter;

e. A high power laser in optical communication with the laser cutter; and,

f. The laser cutter operably associated with the blowout preventer and riser, whereby the laser cutter is capable of being lowered to at or near the seafloor and upon activation delivering a high power laser beam to the tubular that is within the blowout preventer and to an area on the tubular that is at or near the area of mechanical interaction with the shear ram, wherein the high power laser beam has at least about 1 kW of power.

48. A deep water offshore drilling rig capable of drilling in over 5000 feet of water, having a laser delivery assembly operably associated with a blowout preventer and a riser for the rapid cutting of tubulars in the blowout preventer, the offshore drilling rig comprising:

a. a means for hoisting tubulars and advancing a borehole and, a high power laser having at least 20 kW of power;

b. at least 5000 feet of riser sections, capable of being connected together and lowered to a depth at or near a seafloor;

c. a blowout preventer capable of being operably connected to the riser and lowered to the seafloor;

d. the high power laser in optical communication with a laser cutter;

e. the laser cutter mechanically associated and optically associated with the blowout preventer, whereby the laser cutter is capable of being lowered to at or near the seafloor and upon activation delivering a high power laser beam to a tubular that is within the blowout preventer and to an area on the tubular that is intended to be cut.

49. The drilling rig of claim 48, wherein the means for hoisting tubulars and advancing a borehole comprises a derrick, a drawworks and a top drive.

50. A subsea blowout preventer stack comprising:

A ram and a laser cutter positioned within the blowout preventer stack;

The laser cutter having a means to deliver a predetermined high power laser beam cutting pattern, with a high power laser beam having at least about 1 kW of power;

Whereby the predetermined laser beam cutting pattern corresponds to an area of a tubular to be removed within the blowout preventer stack.

51. A subsea blowout preventer stack comprising:

a. A ram movable from a first position to a second position; and ,

b. A high power directed energy means for providing energy greater than about 1 kW and for cutting positioned relative to the ram and facing a pressure containment cavity formed within the stack, wherein the high power directed energy means for providing energy greater than about 1 kW and for cutting defines a directed energy path that enters into the pressure containment cavity and the second position is located within the pressure containment cavity.

52. A subsea blowout preventer comprising:

    a. A high power directed energy means for providing energy greater than about 1 kW and for cutting;

    b. A ram preventer comprising a ram;

    c. A pressure containment cavity within the blowout preventer for passing tubulars therethrough;

    d. The high power directed energy means for providing energy greater than about 1 kW and for cutting defining a directed energy path;

    e. The ram capable of movement into the pressure containment cavity;

    f. An area within the pressure containment cavity for engagement of the ram with a tubular; and,

    g. The directed energy path directed toward the area within the pressure containment cavity.

53. A method drilling subsea wells by using a laser assisted blowout preventer and riser, the method comprising:

    a. Lowering a laser assisted blowout preventer having a first inner cavity from an offshore drilling rig to a seafloor using a riser having a second inner cavity, the seafloor having a borehole;

    b. Securing the laser assisted blowout preventer to the borehole, whereby the borehole, the first inner cavity and the second inner cavity are in fluid and mechanical communication; and,

    c. Advancing the borehole by lowering tubulars from the offshore drilling rig down through the second inner cavity, the first inner cavity and into the borehole;

    d. Wherein, the laser assisted blowout preventer has the capability to perform high power laser cutting with a high power laser beam having at least about 1 kW of power, of a tubular present in the first inner cavity.

54. The method of claim 53, wherein the laser assisted blowout preventer comprises:

    a. a frame;

    b. a blowout preventer stack mechanically associated with the frame;

    c. the blowout preventer stack comprising a third cavity for passing tubulars therethrough, which third cavity is at least a part the first cavity; and,

    d. the blowout preventer stack comprising a laser delivery assembly, wherein the laser delivery assembly is positioned outside of the first and third cavities when not activated.

55. The method of claim 54, wherein the laser delivery assembly comprises:

    a. a laser cutter having a beam path;

    b. the laser cutter operationally associated with a shear ram; and

    c. the beam path directed into the cavity.

56. The method of claim 53, wherein the laser assisted blowout preventer comprises:

    a. an annular preventer;

    b. a pipe ram assembly; and,

    c. a laser shear ram assembly.

57. The method of claim 9, wherein the beam path is above the area within the pressure containment cavity for engagement of the ram with the tubular.

58. The method of claim 9, wherein the beam path is below the area within the pressure containment cavity for engagement of the ram with the tubular.