WHAT IS CLAIMED IS:

1. A slip ring for use with a sealing assembly, comprising:

an expandable metal ring member having a width (w), a wall thickness (t), an inside diameter (d_i) and an outside diameter (d_0), the expandable metal ring member comprising a metal configured to expand in response to hydrolysis; and

one or more cuts located in the wall thickness (t) and spaced around a circumference of the expandable metal ring member, the one or more cuts configured to allow the expandable metal ring member to move between a radially reduced state and a radially enlarged state,

wherein the expandable metal ring member is a barrel slip structure having angled surfaces positioned along its inside diameter (di), the angled surfaces configured to engage one or more associated wedges to move the expandable metal ring member between the radially reduced state and the radially enlarged state.

2. The slip ring as recited in Claim 1, wherein the one or more cuts are a plurality of axial cuts located in the wall thickness (t).

3. The slip ring as recited in Claim 1, wherein one or more of the one or more cuts extend entirely through the wall thickness (t).

4. The slip ring as recited in Claim3, wherein the expandable metal ring member is a beam spring structure.

5. The slip ring as recited in Claim 4, wherein one or more of the one or more cuts extend entirely through the width (w).

6. The slip ring as recited in Claim 2, wherein the expandable metal ring member is a biflex structure, and further wherein one or more of the one or more cuts are geometric shapes.

7. The slip ring as recited in Claim 1, wherein the expandable metal ring member is

a spiral split ring, and further wherein the one or more cuts are a plurality of circumferential cuts.

8. The slip ring as recited in Claim 1, wherein the width (w) is no greater than 2.75 meters.

9. The slip ring as recited in Claim 1, wherein the width (w) ranges from .3 meters to 1.2 meters.

10. A sealing tool, comprising:

a mandrel; and

a sealing assembly positioned about the mandrel, the sealing assembly having a slip ring including:

an expandable metal ring member having a width (w), a wall thickness (t), an inside diameter (d_i) and an outside diameter (d_0), the expandable metal ring member comprising a metal configured to expand in response to hydrolysis; and

one or more cuts located in the wall thickness (t) and spaced around a circumference of the expandable metal ring member, the one or more cuts configured to allow the expandable metal ring member to move between a radially reduced state and a radially enlarged state, wherein the expandable metal ring member is a barrel slip structure having angled surfaces positioned along its inside diameter (di), the angled surfaces configured to engage the one or more wedges to move the barrel slip structure between the radially reduced state and the radially enlarged state.

11. The sealing tool as recited in Claim 10, wherein the sealing assembly further includes one or more sealing elements positioned about the mandrel, the one or more sealing elements operable to move between a radially relaxed state and a radially expanded state.

12. The sealing tool as recited in Claim 11, wherein the one or more sealing elements are one or more elastomeric sealing elements.

13. The sealing tool as recited in Claim 10, wherein the sealing assembly further includes one or more wedges positioned about the mandrel, the one or more wedges operable to move the expandable metal ring member between the radially reduced state and the radially enlarged state.

14. The sealing tool as recited in Claim 10, wherein the expandable metal ring member is a beam spring structure, and further wherein one or more of the one or more cuts extend entirely through the width (w).

15. The sealing tool as recited in Claim 10, wherein the expandable metal ring member is a biflex structure, and further wherein one or more of the one or more cuts are geometric shapes.

16. The sealing tool as recited in Claim 10, wherein the expandable metal ring member is a spiral split ring, and further wherein the one or more cuts are a plurality of circumferential cuts.

17. The sealing tool as recited in Claim 10, wherein the width (w) is no greater than 2.75 meters.

18. A method for sealing an annulus within a wellbore, comprising:

providing a sealing tool within a wellbore, the sealing tool including:

a mandrel; and

a sealing assembly positioned about the mandrel, the sealing assembly having a slip ring including:

an expandable metal ring member having a width (w), a wall thickness (t), an inside diameter (d_i) and an outside diameter (d_0), the expandable metal ring member comprising a metal configured to expand in response to hydrolysis; and

one or more cuts located in the wall thickness (t) and spaced around a circumference of the expandable metal ring member, the one or more cuts

configured to allow the expandable metal ring member to move between a radially reduced state and a radially enlarged state;

setting the slip ring by moving the expandable metal ring member from the radially reduced state to the radially enlarged state; and

subjecting the expandable metal ring member in the radially enlarged state to reactive fluid to form an expanded metal ring member,

wherein the expandable metal ring member is a barrel slip structure having angled surfaces positioned along its inside diameter (di), the angled surfaces configured to engage one or more wedges to move the barrel slip structure between the radially reduced state and the radially enlarged state.