**WHAT IS CLAIMED IS:**

1. A method of cleaning a fuel supply system within a turbine engine, said method comprising:

disassembling a portion of the fuel supply system when the turbine engine is coupled to an airframe to define an access point in a fuel manifold, the access point in fluid communication with the fuel manifold and an interior passageway of a fuel nozzle, wherein the fuel nozzle has coked hydrocarbons formed thereon as a result of fuel decomposition;

discharging a flow of a cleaning solution from a cleaning tank that is coupled to the fuel manifold via the access point, through the fuel manifold, and from the fuel manifold into the interior passageway of the fuel nozzle from the access point, wherein the cleaning solution is configured to remove the coked hydrocarbons from the interior passageway of the fuel nozzle, and wherein the cleaning solution includes a solvent to dissolve the coked hydrocarbons;

discharging the flow of the cleaning solution from the fuel nozzle and into a combustor;

draining the cleaning solution through air holes in the combustor into a combustor case; and

draining the cleaning solution from the combustor case through a drainage port.

2. The method of claim 1, wherein disassembling a portion of the turbine engine comprises disassembling the turbine engine without removing the fuel nozzle from the turbine engine.

3. The method of claim 1, wherein the solvent is an organic solvent comprising an aromatic hydrocarbon.

4. The method of claim 3, wherein the solvent further comprises a surfactant.

5. The method of claim 1 further comprising:

defining an inlet port by disassembling the fuel manifold, wherein the inlet port defines the access point; and

discharging the flow of cleaning solution through the inlet port into the fuel manifold and towards the fuel nozzle.

6. The method of claim 1, wherein the flow of cleaning solution is discharged in at least one pulsed interval having a predetermined discharged time.

7. The method of claim 1, wherein the flow of cleaning solution is discharged in at least a first pulsed interval and a second pulsed interval, where a predetermined residence time is defined between the first pulsed interval and the second pulsed interval.

8. The method of claim 1, further comprising discharging a flow of rinsing solution towards the fuel nozzle from the access point.

9. The method of claim 1, wherein disassembling the portion of the turbine engine provides a flow path from the access point to an interior passageway of the fuel nozzle.

10. The method of claim 1, wherein the cleaning solution enters the fuel nozzle through an opening defined therein such that coked hydrocarbons are also removed from an interior of the fuel nozzle.

11. The method of claim 1, wherein the method further comprises:

filling a volume of the fuel nozzle with an amount of the cleaning solution; and

holding the amount of the cleaning solution within the fuel nozzle for a predetermined residence time.

12. The method of claim 1, further comprising:

defining a second access point by uninstalling at least one ignitor plug by uninstalling at least one ignitor from the turbine engine or by uninstalling a borescope cover from the turbine engine.

13. The method of claim 12, further comprising:

discharging a second flow of cleaning solution towards and outer surface of the fuel nozzle from the second access point.

14. The method of claim 1, further comprising:

disassembling another portion of the turbine engine to define a drainage port therein, wherein the cleaning solution is drained from the turbine engine through the drainage port.

15. The method of claim 14, further comprising:

discharging a flow of rinsing solution towards the fuel nozzle from the access point; and

draining the rinsing solution from the turbine engine through the access point.

16. The method of claim 5, wherein the fuel manifold is disassembled by disconnecting a split control unit from the fuel manifold to define the inlet port.