CLAIMS:

1. A method for restarting an ethylene oxide production process after a period of being shutdown for at least one hour following a continuous steady state period, wherein during the continuous steady state period the process is operated by: (i) feeding a reactor feed gas to a reactor containing a batch of a high-selectivity, rhenium-promoted silver catalyst, wherein the reactor feed gas comprises ethylene at a pre-shutdown steady state ethylene concentration, oxygen at a pre-shutdown steady state oxygen concentration, and at least one organic chloride at a pre-shutdown steady state at least one organic chloride concentration, wherein the at least one organic chloride comprises vinyl chloride at a pre-shutdown steady state vinyl chloride concentration, to yield a reactor product comprising ethylene oxide at a pre-shutdown steady-state value of a selectivity of the process toward the production of ethylene oxide, wherein the ethylene oxide production process is characterized by an ethylene oxide production parameter having a pre-shutdown steady state value, and a reaction temperature has a pre-shutdown steady state reaction temperature value; (ii) recycling a portion of the reactor product to form a reactor recycle; and (iii) combining the reactor recycle with make-up streams comprising at least make-up ethylene at a pre-shutdown steady-state feed rate of make-up ethylene, make-up oxygen at a pre-shutdown steady state feed rate of make-up oxygen, and a make-up organic chloride selected from ethyl chloride and ethylene dichloride at a pre-shutdown steady state feed rate of the make-up organic chloride, to form the reactor feed gas, wherein the period of being off-line is a period during which no make-up oxygen is fed to the batch of the high-selectivity, rhenium-promoted silver catalyst, the method for restarting comprising:

again feeding a reactor feed gas to the batch of the high-selectivity, rhenium-promoted, silver catalyst, wherein during the step of again feeding a reactor feed gas, the reactor feed gas initially comprises ethylene at an initial ethylene restart concentration and the at least one organic chloride at an initial restart concentration of the at least one organic chloride, and the reactor feed gas is formed by combining the reactor recycle with make-up streams comprising at least make-up ethylene at an initial restart feed rate of make-up ethylene and make-up oxygen at an initial restart feed rate of make-up oxygen; and

adjusting the reaction temperature to an initial restart reaction temperature value that is no more than five (5) degrees Celsius above an initial start-up steady-state reaction temperature value when the high-selectivity catalyst was fresh.

2. The method of claim 1, wherein the initial restart reaction temperature value is no more than the pre-shutdown steady-state reaction temperature value.

3. A method for restarting an ethylene oxide production process according to any of the preceding claims, wherein the initial restart reaction temperature value is below the initial start-up steady-state temperature value when the high-selectivity catalyst was fresh by no more than five (5) degrees Celsius.

4. A method for restarting an ethylene oxide production process according to any of the preceding claims, wherein the method further comprises:

selecting a target value of the ethylene oxide production parameter; and

again feeding the make-up organic chloride to the batch of the high-selectivity, rhenium-promoted silver catalyst at an initial restart feed rate of the make-up organic chloride no sooner than when a concentration of oxygen in the reactor product equals or exceeds 0.5 mole percent of the reactor product, and not feeding the make-up organic chloride to the batch of the high-selectivity, rhenium-promoted silver catalyst when the concentration of oxygen in the reactor product is less than 0.5 mole percent of the reactor product; wherein the initial restart feed rate of the make-up organic chloride, on a molar basis, is no more than 30 percent of the pre-shutdown steady state feed rate of the make-up organic chloride.

5. A method for restarting an ethylene oxide production process according to claim 4, wherein the method for restarting further comprises increasing the feed rate of make-up oxygen until a first one of the following occurs: (i) the feed rate of make-up oxygen reaches at least 110 percent of the pre-shutdown steady state feed rate of make-up oxygen; (ii) a reactor feed gas oxygen concentration reaches an oxygen flammability concentration, and (iii) the ethylene oxide production parameter reaches a value no less than the selected target value of the ethylene oxide production parameter.

6. The method of claim 5, wherein during the step of increasing the feed rate of make-up oxygen, during any 15 minute period, the reactor feed gas oxygen concentration does not increase by more than 0.5 mole percent.

7. A method for restarting an ethylene oxide production process according to any of claims 4-6, wherein the method for restarting further comprises increasing the feed rate of the make-up organic chloride if and only if a relative scaled vinyl chloride reactor feed gas concentration is no greater than 110 percent.

8. The method of claim 7, wherein the step of increasing the feed rate of the make-up organic chloride is carried out until a first one of the following occurs: (i) a ratio of the feed rate of the make-up organic chloride to the feed rate of make-up oxygen reaches at least 115 percent of a ratio of the pre-shutdown steady-state feed rate of the make-up organic chloride to

the pre-shutdown steady-state feed rate of make-up oxygen, and (ii) the ethylene oxide production parameter reaches a value no less than the selected target value of the ethylene oxide production parameter.

9. A method for restarting an ethylene oxide production process according to any of claims 4-8, wherein the method for restarting further comprises increasing the reaction temperature until a first one of the following occurs: (i) the ethylene oxide production parameter reaches a value no less than the selected target value of the ethylene oxide production parameter and (ii) the reaction temperature reaches a value higher than the pre-shutdown steady state reaction temperature value by no less than five (5) degrees Celsius.

10. The method of claim 9, wherein during the step of increasing the reaction temperature, during any 15-minute period, the reaction temperature does not increase by more than 0.6°C, when the value of the reaction temperature is no less than the value of the initial start-up steady-state reaction temperature.