CLAIMS

1. A combustion facility, comprising:

a combustion apparatus including a combustion furnace for combusting a fuel containing an alkali metal and one or more heavy metals, and a gas duct into which a combustion gas from the combustion furnace is introduced; and

an additive supply part configured to supply an additive containing sulfur to a position inside the combustion apparatus where a temperature during operation is within a range of not lower than 400°C and not higher than 750°C.

2. The combustion facility according to claim 1, comprising a supply amount decision part configured to decide a supply amount of the additive by the additive supply part on the basis of a content of the one or more heavy metals in the fuel,

wherein the supply amount decision part is configured to decide the supply amount of the additive so that an equivalent ratio of sulfur contained in the additive supplied per unit weight of the fuel to the number of moles of at least one of the one or more heavy metals contained per unit weight of the fuel is within a specified range.

3. The combustion facility according to claim 2,

wherein the one or more heavy metals include lead and zinc, and

wherein the supply amount decision part is configured to decide the supply amount of the additive so that an equivalent ratio of sulfur contained in the additive supplied per unit weight of the fuel to the total number of moles of lead and zinc contained per unit weight of the fuel is not less than 0.5 and not more than 10.

4. The combustion facility according to claim 2,

wherein the supply amount decision part is configured to select a heavy metal as a reference for calculating the supply amount of the additive from the one or more heavy metals,

on the basis of a hydrochloric acid concentration in the combustion gas generated by combustion of the fuel.

5. The combustion facility according to claim 4,

wherein the one or more heavy metals include lead and zinc, and

wherein the supply amount decision part is configured to decide the supply amount of the additive so that, when the hydrochloric acid concentration in the combustion gas is not more than 1000 ppm, an equivalent ratio of sulfur contained in the additive supplied per unit weight of the fuel to the number of moles of lead contained per unit weight of the fuel is not less than 0.5 and not more than 10.

6. The combustion facility according to any one of claims 1 to 5,

wherein the additive contains ammonium sulfate.

7. The combustion facility according to any one of claims 1 to 6,

wherein the combustion apparatus includes a heat transfer part disposed downstream of the combustion furnace, in which a heat transfer tube is disposed or which is formed by a wall including a heat transfer tube, and

wherein the additive supply part is configured to supply the additive to the heat transfer part.

8. The combustion facility according to any one of claims 1 to 7, comprising a heat transfer tube disposed inside the gas duct,

wherein the additive supply part is configured to supply the additive to the position under a condition that a temperature of the heat transfer tube or a fluid flowing through the heat transfer tube is not higher than 450°C.

9. The combustion facility according to any one of claims 1 to 8,

wherein the additive supply part is configured to supply an additive containing sulfur to a position where a temperature during operation is within a range of not lower than 500°C and not higher than 700°C.

10. A method for operating a combustion facility including a combustion furnace and a gas duct connected to the combustion furnace, comprising:

a step of combusting a fuel containing an alkali metal and one or more heavy metals by the combustion furnace; and

a step of putting an additive containing sulfur to a position inside the combustion furnace or the gas duct where a temperature during operation is within a range of not lower than 400°C and not higher than 750°C.