US 20240222980A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0222980 A1

SULEIMAN et al. (43) Pub. Date: Jul. 4, 2024

(54) SYSTEM AND METHOD FOR USING BASELOAD POWER OF RESERVE GT SYSTEM FOR IMPROVING GT EMISSIONS OR GRID STABILITY

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(21) Appl. No.: **18/576,665**

(22) PCT Filed: **Dec. 2, 2021**

(86) PCT No.: **PCT/US2021/072692**

§ 371 (c)(1),
(2) Date: **Jan. 4, 2024**

Related U.S. Application Data

(63) Continuation of application No. PCT/US2021/037742, filed on Jun. 17, 2021.

Publication Classification

(51) **Int. Cl.**

H02J 3/48	(2006.01)
H02J 3/28	(2006.01)
H02J 3/38	(2006.01)

(52) **U.S. Cl.**

CPC ***H02J 3/48*** (2013.01); ***H02J 3/28*** (2013.01); ***H02J 3/381*** (2013.01); *H02J 2300/20* (2020.01); *H02J 2300/30* (2020.01)

(57) **ABSTRACT**

A system includes a gas turbine (GT) system at a power plant operatively coupled to a generator to always generate power at a baseload. A first portion of the GT system's baseload power is transmitted to an electric grid. Where demand for power from the grid does not exceed a threshold, a second portion of the GT system's baseload power is transmitted to a hydrogen-producing electrolyzer to generate hydrogen fuel for a second GT system. Where demand for power from the grid exceeds the threshold, a third portion of the GT system's baseload power is transmitted to the grid. The GT system always runs at baseload but is capable of providing increased power to the grid quickly, like conventional spinning reserves. The system improves efficiencies by running all GT systems at baseload, and reduces emissions for the second GT system by providing hydrogen fuel thereto when grid power demand allows.