# AMERICAN LEGION BOYS NATION

# BILL SUMMARY

Note: This form must be completed and accompany all Bills submitted for consideration by The American Legion Boys Nation Senate.

**DELEGATE NAME:** James Davis

**DELEGATE STATE:** Virginia

**NAME OF BILL:** Thorium Energy Act of 2015

**BRIEF SUMMARY OF BILL:** The Thorium Energy Act of 2015 hopes to stimulate research and energy production of thorium energy in the United States by giving a tax cut to businesses who research and create a thorium reactor, an advantageous version of the current uranium reactors.

To Be Completed By
The Clerk Of The Senate

BILL NO.

**SB-18**

# AMERICAN LEGION BOYS NATION SENATE

# IN THE SENATE OF AMERICAN LEGION BOYS NATION

Senator **James Davis** of **Virginia** introduced the following Bill, which was read twice and referred to the following American Legion Boys Nation Senate Committee:

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a Bill

To stimulate research and energy production in the field of thorium nuclear energy by giving a tax relief and insurance to American businesses who conduct beneficial research and build liquid fluorine thorium reactors in United States which will promote job growth and economic stimulation.

BE IT ENACTED BY THE AMERICAN LEGION BOYS NATION SENATE ASSEMBLED, THAT

SECTION 1: SHORT TITLE

Short Title.--This act may be cited as the "Thorium Energy Act of 2015"

SECTION 2: DEFINITIONS

In this Act

1) LIQUID FLUORIDE THORIUM REACTOR. - The term "Liquid Fluoride Thorium Reactor" (LFTR) means the type of nuclear reactor where the reactor where the thorium fuel cycle is used with a fluoride-base, molten liquid salt for fuel through-

(A) A single fluid reactor;

(B) A two fluid reactor; or

(C) A hybrid reactor.

SECTION 3: FINDINGS

The Congress finds the following:

1) U.S. nuclear energy programs have accounted for 19% of the total energy production in the United States.

2) There has been a halt in the production of nuclear power plants in over 30 years.

3) Nuclear power accounts for 63% of carbon free energy in the United States.

4) Events such as the Three Mile Island Disaster, the Fukishima Disaster, and the Chernobyl Incident have shed negative public opinion on nuclear power due to the massive contamination that had occurred after the incident

5) Today's solid fuel reactors do not breed new fuel from the uranium-238 to make up for the fissile they consume.

6) India leads thorium commercialization and envisions meeting 30% of its electricity demand by 2015.

7) The Cold War led the United States to invest in uranium due to the byproduct of nuclear reactions being plutonium, the element used to make nuclear weapons. Thorium research was suppressed because of its post-reaction uselessness in military application.

8) The LFTR uses a strong negative temperature coefficient of reactivity to be safer than most current reactors. The temperature dependence comes from three sources which are: neutrons are absorbed better when thorium overheats, a positive contribution to temperature occurs when the moderator is heated, and in the case of an overheating incident, the fluid is pushed out of the core into a reserve where the fuel can be safely stored over a long time period.

9) The LFTR is virtually pressure free which prevents the reactor from blowing up and prevents leaks in heat exchanges.

10) The LFTR contains a fail-safe core in which in the case of an emergency, the liquid fluoride and thorium flows into a cooled storage tank by a draining process.

11) Earth's Crust contains four times more thorium than uranium-238 fuel, making it more common than lead, mercury, tin, and silver.

12) The product of the thorium reaction produces only two radioactive products. The products are cesium-137 and strontium-90, with the half-life of cesium-137, the longer of the two, being approximately 31 years in comparison to uranium reactors which produce plutonium-239 with a half-life of 24,000 years.

13) The capital costs of thorium reactors would be lower than conventional uranium-based nuclear reactors. A one gigawatt (GW) thorium power plant would cost at most an estimated $780 million in comparison to the current cost of $1.1 billion per GW for a uranium-fueled reactor.

14) Electricity from coal costs 4.2 cents per kilowatt hour (kWh) to produce electricity while thorium costs 1.4 cents/kwh. Electricity in current uranium-based plants costs 6.7 cents/kWh.

SECTION 4: BENEFITS FOR CLEAN ENERGY

(a) Companies in the United States who produce nuclear power by using LFTRs shall receive production tax credit of 3 cents/kWh from the first 8,000 MWe (Megawatt Energy) of new nuclear capacity for the United States for the first eight years of operation.

(b) The United States government shall provide federal risk insurance worth up to $2.2 billion for up to five LFTR plants per business.