

## Act 1092 Update

The discussion of utilizing spent-fuel nuclear materials for a next generation fast reactor has been discussed for several years within the Arkansas Legislative Energy Committee which has culminated into Act 1092 by Representative Ladyman. Several meetings have taken place to discuss technology issues, possible site locations, developmental execution plans and funding requirements with Argon Laboratories, University of Arkansas, Department of Energy, Burrough Brasuell Corporation and Mr. John Warmack, and the Arkansas Department of Energy and Environment. The main goal is to develop a document to seek funding from the Department of Energy for full program development.

### Program Overview

There have been many discussions over the past several years by various parties regarding the spent-fuel materials stored in the parking lot of Arkansas Nuclear One and how to utilize existing technology to recycle the materials into a new fuel source for power generation.

The program effort by steps is as follows:

- Build a factory that can take the existing Nuclear One spent-fuel materials and recycle that material into a safe fusional product.
- Develop a manufacturing site to produce the reactor chamber required to utilize the recycled materials.
- Identify a site with existing power generation infrastructure or a greenfield site to locate the new reactor chamber to utilize the recycled material to produce clean/safe energy at an affordable price.

### Program Benefits

The results under Act 1092 could provide many benefits to the state of Arkansas:

- Technology advancements in engineering, construction and operations that will be required for the spent-fuel recycling and reactor chamber manufacturing and the high paying sustainable jobs that accompany these types of ventures.
- Ability to expand/export the technology and products.
- Provide safe and affordable energy to the citizens of Arkansas.

### Program Efforts

Under Act 1092, the development of a program proposal to the Department of Energy to provide a green light for federal funding in the development of existing technologies for commercial use.

1 State of Arkansas  
2 93rd General Assembly  
3 Regular Session, 2021  
4

# A Bill

HOUSE BILL 1890

5 By: Representative Ladyman  
6

## For An Act To Be Entitled

8 AN ACT TO CREATE A STUDY ON THE COMMERCIAL  
9 APPLICATION OF EXISTING TECHNOLOGY TO RECLAIM AND  
10 REPURPOSE SPENT NUCLEAR FUEL RODS; AND FOR OTHER  
11 PURPOSES.  
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## Subtitle

14 TO CREATE A STUDY ON THE COMMERCIAL  
15 APPLICATION OF EXISTING TECHNOLOGY TO  
16 RECLAIM AND REPURPOSE SPENT NUCLEAR FUEL  
17 RODS.  
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21 BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF ARKANSAS:  
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23 SECTION 1. TEMPORARY LANGUAGE. DO NOT CODIFY. Legislative findings -  
24 Legislative study of and report on commercial application of existing  
25 technology to reclaim and repurpose spent nuclear fuel rods - Creation -  
26 Purpose.

27 (a) The General Assembly finds that:

28 (1) In August 2016, the Argonne National Laboratory hosted a  
29 delegation from Arkansas, including staff from the Arkansas Economic  
30 Development Commission;

31 (2) In January 2017, the Arkansas Alternative Energy Commission  
32 issued a recommendation to Governor Asa Hutchinson to support the University  
33 of Arkansas and the United States Department of Energy national laboratories  
34 to prepare and make recommendations and to offer options on using existing  
35 technology to convert spent nuclear fuel rods into new nuclear fuel;

36 (3) In August 2017, the Joint Committee on Energy held hearings



1 on advanced nuclear technology to reprocess spent nuclear fuel rods and  
2 unanimously approved an interim study resolution on the matter; and

3 (4) In August 2018, the Joint Committee on Energy held a meeting  
4 at Arkansas Nuclear One and further discussed the issues under subdivision  
5 (a)(1)-(3) of this section, including without limitation that the:

6 (A) University of Arkansas system, in conjunction with  
7 other institutions of higher education, can and are willing to provide a  
8 detailed analysis examining the benefits of "New Nuclear" compared to the  
9 risks of continued storage of spent fuel at Arkansas Nuclear One;

10 (B) Fast reactor technology and electrochemical spent fuel  
11 reprocessing is ready for commercial development; and

12 (C) The Department of Health and the Department of Energy  
13 and Environment support the application for funding the establishment of an  
14 education, risk analysis, and optimization design program.

15 (b) The House Committee on Public Health, Welfare, and Labor and the  
16 Senate Committee on Public Health, Welfare, and Labor shall meet jointly to  
17 conduct a study on the commercial application of existing technology to  
18 reclaim and repurpose spent nuclear fuel rods.

19 (c)(1) The Chair of the House Committee on Public Health, Welfare, and  
20 Labor and the Chair of the Senate Committee on Public Health, Welfare, and  
21 Labor shall call the first meeting for the purpose of beginning the study  
22 required by this section within sixty (60) days of the effective date of this  
23 act.

24 (2) The Chair of the House Committee on Public Health, Welfare,  
25 and Labor and the Senate Committee on Public Health, Welfare, and Labor shall  
26 meet jointly at least one (1) time every two (2) months in order to conduct  
27 the study but may meet more often at the call of the chairs.

28 (d) If the House Committee on Public Health, Welfare, and Labor and  
29 the Senate Committee on Public Health, Welfare, and Labor determine that it  
30 is necessary, the House Committee on Public Health, Welfare, and Labor and  
31 the Senate Committee on Public Health, Welfare, and Labor may contract with  
32 one (1) or more outside consultants to assist the House Committee on Public  
33 Health, Welfare, and Labor and the Senate Committee on Public Health,  
34 Welfare, and Labor with their study.

35 (e)(1) The purpose of the study required under this section is to  
36 study the commercial application of existing technology to reclaim and

1 repurpose spent nuclear fuel rods.

2 (2) The study required under this section shall include without  
 3 limitation:

4 (A) An assessment of a specific program to offer to the  
 5 federal government to include a proposed location in Arkansas and for the  
 6 assets required to close the nuclear fuel cycle and request funding for the  
 7 establishment of an education, risk analysis, and optimization design  
 8 program; and

9 (B) The assembly of a team of interested stakeholders with  
 10 expertise to submit a funding application to the United States Department of  
 11 Energy, including without limitation individuals from the:

- 12 (i) General Assembly;
- 13 (ii) Executive department;
- 14 (iii) University of Arkansas; and
- 15 (iv) Argonne National Laboratory.

16 (f) On or before December 1, 2022, the House Committee on Public  
 17 Health, Welfare, and Labor and the Senate Committee on Public Health,  
 18 Welfare, and Labor shall file with the Legislative Council a final written  
 19 report of their activities, findings, and recommendations.

20 (g) The study required under this section shall be complete upon  
 21 submission of the final written report to the Legislative Council required  
 22 under subsection (f) of this section.

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 25 **APPROVED: 4/30/21**  
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