

# **ARCHIVE OF HARDCOPY AND ELECTRONIC FILES FOR THE LENR RESEARCH DOCUMENTATION INITIATIVE**

## ***Draft Description***

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**1. Introduction**

Cold fusion (CF) has major potential not only to displace fossil fuels, but also to provide energy in applications and areas where energy is not currently available. The discovery of CF (now also called low energy nuclear reactions, LENR) was announced by Fleischmann and Pons on March 23, 1989. The immense potential energy benefit of LENR was fully realized at the time. Despite being rejected by mainstream science within a year or so, LENR continues to be researched by many capable scientists worldwide working independently and supported by government agencies and/or investors. A massive body of evidence for its reality has been accumulated.

Many of the investigators who have pursued LENR despite the rejection began their work in the early years after the announcement. Now more than 30 years later a lot of them are leaving the field because of retirement or health issues. Because of the rejection and lack of funding, the researchers’ records have not been systematically recorded and preserved. At the same time, these records may eventually help understand LENR and achieve its benefits. Their loss would be a tragedy not only for the field, but also for humankind.

The LENR Research Documentation Initiative (LRDI) has been undertaken to help mitigate this loss. It is being performed by Thomas Grimshaw in his firm LENRGY, LLC. More information on the LRDI is in Appendix A. A principal objective of the LRDI is to carefully archive both the hardcopy and electronic records obtained from researchers and other participants. Keeping the records available for additional analysis (or reanalysis<sup>1</sup>) may help with understanding LENR and

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<sup>1</sup> In minerals mining and milling, this process would be called “leaching the tailings”.

realizing its benefits. When LENR benefits have been achieved, the records will also be valuable for documenting the history of the accomplishment – and for recognizing the accomplishments of the researchers and other contributors.

A method has been found for archiving hardcopy files, and another solution is being developed for electronic files. The purpose of this document is to describe the procedures for archiving files obtained in LRDI projects.

## **2. Archive of LRDI Hardcopy Files**

LENR originated at the University of Utah when Fleischmann and Pons announced it at a press conference in 1989. The Marriott Library at the university (Figure 2-1) is interested in archiving LENR records, although the library does not have records from Fleischmann and Pons. An LRDI project was performed in 2021 to document the LENR records archived in the Special Collections<sup>2</sup>. The archived LENR records found are listed in Table 2-1.



*Figure 2-1*

*The Marriott Library and the Special Collections Reading Room*

When it was found that additional hardcopy records would be welcomed for archiving in the library’s Special Collections, it became the repository for hardcopy records from LRDI projects.

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<sup>2</sup> Grimshaw, T., 2021. Cold Fusion Archives at the University of Utah. Draft Report. LENRGY, LLC, Austin, Texas. October.

Table 2-1  
*Cold Fusion Records at the University of Utah Special Collections*

<u>Collection Name</u>	<u>Accession No</u>	<u>Feet/Boxes</u>
National Cold Fusion Institute Records, 1987-1992	Acc0529	7/15
Charles G. Beaudette Papers, 1933-2006	Accn297	19.5/42
Craig Hibberd Collection on Cold Fusion	Accn1309	0.5/1
Cold Fusion Collection, 1987-1992	Accn1319	1.5/3
Steven E. Jones Papers, 1983-1992	Accn1359	1.5/3
Michael Melich Papers, 1912-2012	Accn2016	30.75/70
ENECO Records, 1912-2008	Accn2464	120/263
Talbot A. Chubb Papers, 1930-2011	Accn2559	46.5/97
John O'M. Bockris Papers, 1923-2013	Accn2732	18/35

Dr. Edmund Storms provided his LENR files as a pilot project for archiving LRDI records<sup>3</sup>. It took place in November 2021 (Figure 2-2). Subsequently, the files of Tom Passell were also provided to the Marriott library’s Special Collections<sup>4</sup>. Fourteen storage tubs were donated by Storms, and eight boxes were provided by Passell. During these projects, arrangements were made with staff at the library for a future LRDI project records when they become available from participants.



Figure 2-2  
*Storage Room at Dr. Storms Home for LENR Files (Center of Photo) and Storage Tubs with His Files after Delivery to the Marriott Library*

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<sup>3</sup> Grimshaw, T., 2022. Transfer of Your Hardcopy LENR Records to the Marriott Library at the University of Utah. Memo to Edmund Storms. February.

<sup>4</sup> Grimshaw, T., 2022. Archive of Cold Fusion Materials to the University of Utah Marriott Library. Memo to Tom Passell. August.

### 3. Requirements for Electronic File Archive

Long-term storage of electronic files collected for LRDI projects must meet several requirements. Because the records have been created over a long period by many investigators, they are voluminous and therefore require substantial storage capacity. The records currently reside on two large-capacity (12TB) external hard drives (Figure 3-1).



*Figure 3-1*

*Two Hard Drives for Storage of LRDI Files*

A major objective of the LRDI is to make the combined files of the participants readily available for further analysis when LENR is better understood. They must therefore be available for potentially a number of researchers and other interested parties. Easy accessibility is therefore another storage requirement. While having large capacity and ready accessibility are mandatory, the storage solution must also be reasonable in cost to ensure long-term viability.

Buy-in and cooperation by the participants are also essential, so the solution must be secure to maintain their confidence. Accessibility to their records will need to depend on permission of the participants as owners of the information. The solution must also be easy to use in order to secure and maintain participant cooperation. For example, it must be comparable to a local hard disk in order to be useful to a broad range of participant familiarity with computers and other digital tools.

#### **4. Cloud-Based Digital Archive Solution**

A collaboration of LENRGY, LLC with Rob Christian was initiated in the summer 2022. Mr. Christian, who is a professional web developer, has a primary interest in raising funds for LENR research and in gaining acceptance of LENR by mainstream science using social media activism. His initiative emphasizes LENR as a solution for global climate change – “Climate Change Answer”. More detail on the initiative is in Appendix B.

In this collaboration, Mr. Christian selected AWS for the LRDI cloud-storage provider<sup>5</sup>. The solution is referred to as the “LRDI-AWS Storage Solution” (LRDI-AWS in short). AWS is self-described as being widely recognized as the most secure and most trusted cloud services provider among Fortune 500 tech companies. For uploading files securely, Mr. Christian selected the free FTP client, Filestash<sup>6</sup>. Amazon Web Services (AWS) S3 Glacier is further self-described<sup>7</sup> as shown below.

Amazon Web Services (AWS) is the world’s most comprehensive and broadly adopted cloud platform, offering over 200 fully featured services from data centers globally. Millions of customers—including the fastest-growing startups, largest enterprises, and leading government agencies—are using AWS to lower costs, become more agile, and innovate faster.

Most Functionality. AWS has significantly more services, and more features within those services, than any other cloud provider—from infrastructure technologies like compute, storage, and databases—to emerging technologies, such as machine learning and artificial intelligence, data lakes and analytics, and Internet of Things. This makes it faster, easier, and more cost effective to move your existing applications to the cloud and build nearly anything you can imagine.

Most Secure. AWS is architected to be the most flexible and secure cloud computing environment available today. Our core infrastructure is built to satisfy the security requirements for the military, global banks, and other high-sensitivity organizations. This is backed by a deep set of cloud security tools, with over 300 security, compliance, and governance services and features. AWS supports 98 security standards and compliance certifications, and all 117 AWS services that store customer data offer the ability to encrypt that data.

Filestash is a free web application that provides the means for uploading files to AWS. It utilizes FTP and SFTP for transfer of files from a participant's computer to the Cloud, in his or her folder on AWS.

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<sup>5</sup> “My Plan for Your Digital Archive”. Email from Rob Christian to Thomas Grimshaw, August 21, 2022.

<sup>6</sup> An alternative solution for uploading may be Cyberduck, which does not utilize a website, but it is not being used during the introduction of the LRDI-AWS solution.

<sup>7</sup> <https://aws.amazon.com/what-is-aws/>

The LRDI-AWS solution is currently being developed as an LRDI project. A laptop computer has been set up with the necessary files. An AWS account has been opened, and Filestash has been initiated on the computer.

When the implementation is complete, a pilot project is planned for the files of a participant who is experienced with the internet. After the pilot project, the electronic files of other LRDI projects will be uploaded as participants' files become available. The long-term maintenance of the LRDI-AWS system will be determined in the future along with the LRDI as a whole.

## **5. LRDI-AWS Setup for Participant File Storage**

Setup for Participants' electronic files has been developed to be as straightforward as possible. When a Participant agrees to have his or her electronic files stored in the LRDI-AWS, two separate steps are required. In the first step, the file folder (referred to as a "bucket" in AWS) is established. The second step is to work with the participant to upload the files for storage and subsequent download when needed.

Using the previously-prepared computer described above, the LRDI manager sets up the participant's AWS folder using two files – "new-user.txt" and "aws\_tool". First, the new-user.txt file is opened. It contains the line "LENRGY\_USER=". The last and first name of the participant are entered after the "=" sign (e.g., =Storms-Ed).

Next, the aws\_tool is activated (double-clicked). This tool then connects with AWS and sets up the credentials for the Participant name as designated in the previous step (after the "=" sign). It also creates a new text file, located in the same folder location as the new-user.txt and aws\_tool files. This new file contains the participant's "credentials", as shown in the example below:

```
{
  "AccessKey": {
    "UserName": "Storms-Ed",
    "AccessKeyId": "AKIAUCS7ZVN6BRJ4T6O3",
    "Status": "Active",
    "SecretAccessKey": "QqluamxAwc/aDvgdSx4Lmt1WgejpBV6ef4Mnf26i",
    "CreateDate": "2023-02-13T00:32:49+00:00"
  }
}
```

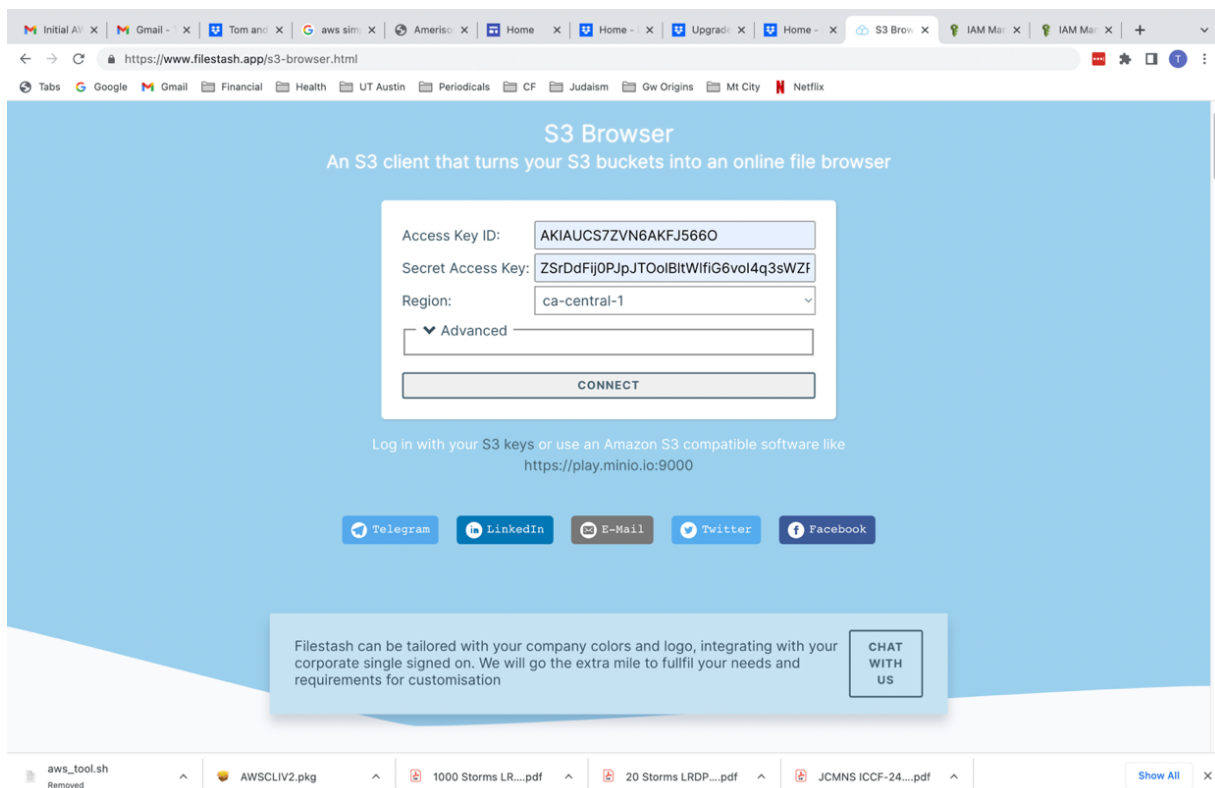


These credentials are then provided, usually by email, to the participant by the LRDI-AWS manager. The participant then opens the Filestash website with the URL shown below to open its S3 window to AWS:

`https://www.filestash.app/s-3browser.html`

This Filestash window (Figure 5- 1) has spaces for entering the “AccessKeyID” (which is actually a username) and the “SecretAccessKey” (equivalent to a password). The participant makes entries in these windows from the credentials file sent to the participant previously as described above.

*Figure 5-1  
Filestash Window for Participant Credentials*



When the two spaces are filled in and the “CONNECT” button is pushed by the participant, his or her folder is created in AWS, and files can then be uploaded to or downloaded from the storage. This folder is approximately equivalent to a folder on the participant's hard drive. Files



can be transferred either by the LRDI-AWS manager or the participant. Uploading and downloading may be done by copy-and-paste or by drag-and-drop.

## **6. *Instructions to Participants***

When a participant agrees to have his or her electronic files archived in the LRDI-AWS, a memo is provided containing the following information:

- Welcoming statement
- Brief description of the LRDI-AWS
- Notification of the name of the participant’s AWS folder
- The username (AccessKeyID) and password (SecretAccessKey) for access to the folder
- Instructions for opening the file stash window
- Description of entry of username and password in the Filestash window
- Opening of the AWS folder for uploading files with copy-and-paste or drag-and-drop
- Provide instructions for future access to the folder
- Suggested organization of the folder with sub folders as shown below:
  - Documents. (e.g., Word and Excel files). Organize per participant’s requirements.
  - Data. Include experiment details, methods of data collection and subfolders with the data. Organize per participant’s requirements.
  - Other Folders. Specific to the needs of the participants.

The memo is finished with instructions for communication with the LRDI-AWS manager as well as contact information when additional assistance is needed.

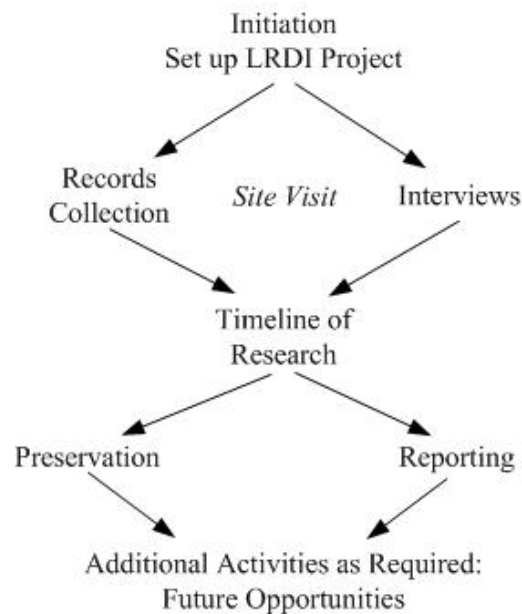
## **Appendix A. Overview of the LENR Research Documentation Initiative**

Many investigators who continued to pursue LENR despite its rejection began their work in the early years after the 1989 announcement. As noted in Section 1, a lot of them are leaving the field because of retirement or health issues. LENR’s rejection and consequent lack of funding have resulted in the researchers’ records not being systematically recorded and preserved. At the same time, these records may eventually help to understand LENR and achieve its benefits. Their loss would be a tragedy not only for the field, but also for humankind. The LRDI procedure and projects to date are described below.

### **Procedure**

After a researcher or other participant agrees to an LRDI project, the procedure (shown below) is straightforward. The hard copy and electronic records are collected and are supplemented with one or more recorded and transcribed interviews.

*Figure 1. LRDI Procedure*



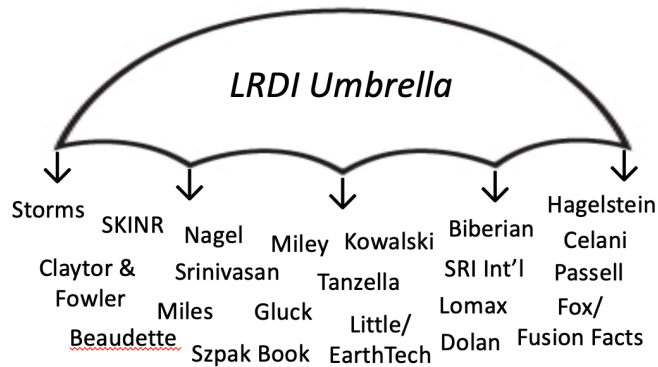
The interview transcripts help make the data and analysis obtained in an LRDI project more useful for future reinterpretation. A timeline of activities is developed, and arrangements are made for records preservation as described in this report. Opportunities for additional work are normally included in each project and in many cases are pursued in a subsequent phase. One or

more site visits may be made to gather information and conduct the interviews. As progress is made, the components of the record are documented in a series of memos. A project report is then prepared based on the collection of memos.

**LRDI Projects**

The LRDI now includes 21 projects (shown below) with many of the most prominent researchers in the field. The electronic and hard-copy files are being preserved both as a tribute to the researchers and to ensure they will be available for analysis in the future to help solve the riddles of LENR.

*LRDI Projects*



Humankind desperately needs energy from LENR to sustain the habitability of the earth. Its rejection was apparently a mistake both in the processes of science and for the long-term prospects of humanity. The records generated up to now may well be able to yield answers to questions about LENR and how to realize its benefits.

## **Appendix B. Description of the “ClimateChangeAnswer” Initiative**

Rob Christian's pursuit of LENR and its benefits is focused on the urgent issue of global climate change (GCC)<sup>8</sup>. His “Climate Change Answer” (CCA) initiative promotes LENR as a zero-waste and zero-emissions solution to GCC and as the way to meet the energy needs for the future of humanity. Its objectives include the following:

- Create a 100% carbon-neutral future
- Power every home and vehicle with abundant, cheap, clean energy
- Make fossil fuel irrelevant so that countries will no longer fight over energy resources
- Reduce poverty and hunger
- Revolutionize the methods of material recycling
- Neutralize nuclear waste
- Make every element of the periodic table renewable through transmutation

The CCA initiative seeks to secure LENR’s acceptance by mainstream science for intensive investigation through the following actions:

- Produce informative and entertaining videos that will:
  - Uncover the reasons LENR was rejected and shine light on them
  - Educate and mobilize climate change activists
- Create a social movement that will:
  - Spawn a viral social media campaign
  - Bring LENR awareness and education to schools
  - Generate revenue streams to fund grassroots LENR research groups
  - Support fundraising for LENR startups
  - Create policy changes like adding LENR to the Green New Deal and adopting the Sensible Nuclear Energy Plan for America
- Organize a highly public and collaborative demonstration to prove the existence of the LENR effect
- Seek to host a Ted talk to demonstrate LENR's solution to GCC

Currently, videos to meet these aims are being produced based on extensive contacts and interviews of knowledgeable persons in the LENR field. An experimental demonstration is also being developed in collaboration with Fran Tanzella, who is retired from SRI. While there he had extensive experience in LENR experiments working with Michael McKubre.

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<sup>8</sup> This description is from Rob Christian’s one-page flier, “ClimateChangeAnswer.com”.