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...the echo edition

written and directed by PHYLLIS HEENEY

June 6\*, 7, 12, 13 & 14, 2025

Childs Auditorium (Mackenzie Community School), Deep River







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# THE SOUND OF NEUTRONS

### PRODUCER'S NOTES

I wrote these notes for the original production of The Sound of Neutrons. The thoughts and feelings are as true today as they were five years ago. Thank you everyone for bringing this Echo Edition to life.

Producing a show of this size reminds me that community is everything. It takes a tremendous amount of talent, enthusiasm and energy to bring a show



to life and we are fortunate to live in a community that has all of these in abundance!

Being able to collaborate and bring to life some of the history of our town and nuclear heritage is a privilege. Every time we have reached out to the community for assistance in bringing this show to life, the response has been wonderful. The support for community arts and the impact it can have on people is evident wherever we look.

Working with the cast and crew of The Sound of Neutrons has been both an enriching and rewarding experience for me personally. I would like to thank all of you for joining us today for this telling of a small piece of the Deep River story and I invite you to reflect on your own part in Deep River's story going forward.

- Sandra Celovsky



# THE SOUND OF NEUTRONS

### WRITER/DIRECTOR'S NOTES

In 2020, the Deep River Players put on the first version of The Sound of Neutrons - at least we tried to. We had a great and successful opening night. The second performance was Friday, March 13th, 2020 - the day Ontario shut down with the COVID 19 lockdown. The show went on, but many audience members chose to stay home. Three performances were cancelled. I was devastated.



Writer and Director **Phyllis Heeney** is shown at the controls of the NRU reactor in 1989.

I kept thinking that we would redo the show in another month, two, three, maybe a year, but as the lockdown dragged on, I realized how fortunate we were to have done two performances. They say "the show must go on" so here we are five years later, retelling the story with a new cast, a revised script and a couple new songs.

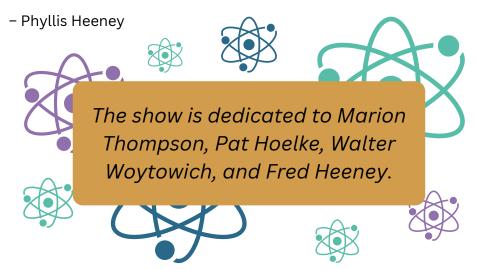
I first conceived of the show about seven years ago when Eva Gallagher suggested that I write a play for the 75th anniversary of the Town of Deep River and the start-up of the ZEEP reactor. She thought that Bruno Pontecorvo would be a good character in the play. When I started researching his life, it didn't take much embellishment to make an intriguing story. The script is also loosely based on many other real people and events. Check out the "SHOW QUIZ" further along in this program for more details.

# THE SOUND OF NEUTRONS

### WRITER/DIRECTOR'S NOTES CONT'D.

As one of the first female engineers in Operations in Chalk River, I can understand a bit of the challenges my fictional female physicist faced (say that 10 times fast). It wasn't always easy, but it was so much easier for me than many of the women who went before me. Maria Sagat inspired the lead character, Maria Josefa (MJ) Martinovsky. Like the fictional MJ, Maria was a theoretical physics professor in Bratislava before moving from Slovakia to Deep River. This talented woman was unable to get hired as a physicist in the 1960s because of her gender. I'd like to acknowledge Lynne Larson, Mary Elinor Hunstman Mawson, Nancy Schmeing, Arden Okazaki and the many others whose struggles helped pave the way for us.

Many thanks to an awesome cast and crew who've worked since December to make this become a reality. Special thanks to Susan McBride and Sandra Celovsky who kept things going while I was "snow birding" in Florida. Another shout out to Gord Tapp who arranged 24 songs for nine instruments, and the talented musicians who made the music sound so great! And to all the parents who let me spend the past three months filling their kids with cookies and crazy songs about Uranium and Fission long after bedtime. And last, but not least, to my husband Paul Zdrazil, who tried his best to keep my feet on the ground through the whole thing. Wow, what a ride!



### **MEET THE CHARACTERS**



# THE CHARACTERS CONT'D.



# THE CHARACTERS CONT'D.



# THE CHARACTERS CONT'D.



# **MEET THE PLAYERS**

MJ - Helena Bartholomew

**Gracie** - Jenna Zanki

Bertha - Jade Nauman

Gloria - Lidia Gialbert

Cobacho

Eugene - Jodie Primeau

Miss Wigglebottom - Kyra Lade

Marianne/Farmgirl - Vicky

Charbonneau

Margaret/Police 2/Farmgirl -

Ash Anne Cluff

Missy/Farmgirl - Angela Mayhew

Edith - Anne Jarcew

Flo - Mallory Green

# THE PLAYERS CONT'D.

Rejeane/Farmgirl - Nicole Lebel

Police 1/Operator - Hannah

Schmidt

Howe's Secretary/Walter -

Juliana Feenstra

Stan - Steven Bemis

Bruno - Kody Sullivan

Joe - Eppo Van Houten

**Leonard** - Mitch Mackay

**Lew** - Jay Sur

Dr. Cockcroft - Ike Dimayuga

Gaston/Operator - Jacques

Vinclette

CD Howe - Greg Merrill

Father McElligott - Mac Jones

Jim McKenna - Jim McKenna

Etta Feelgood - Scarlytte

Merrill

Wesley Feelgood - Trenton

Cluff

Benny Feelgood - Carter Jarbo

Sybill Feelgood - Matilda

Siddiqui

Marlene Feelgood - Lillyana

Lade

Hazel Feelgood - Maddox Klein

Orsanna Feelgood - Harper

Klein

Maureen - Chloe Bemis

Mona - Adelaide Siddiqui

Morag - Maggie Ingram

Four-Eyes - Mary MacKay

Monika - Sofia MacKay

Tito/Kids Chorus - Rupert

Stephens

Jill/Kids Chorus - Penelope

Primeau

Antonio/Kids Chorus - Rowland

Jalbert

Doris - Lily Woodcroft

Denise/Wesley (June 14) -

Sydney MacKay

**Operator** - Alex Laplante

Robert - Karen Shewchuk

Wives Chorus - Tracy Echlin

Wives Chorus - Ashley Conway

Wives Chorus/Farmgirl -

Catherine Feenstra

Wives Chorus - Loreena MacKay

### THE MUSICIANS



Left to right: Brenda Forsythe, Gordon Burton, Orvil Dillenbeck, Darlene TerMarsch, Dale Tapp, Gord Tapp, Ted Clifford, & Malcolm Griffiths. Missing: Rob Carson.

Gord Tapp - Band Leader,

Trumpet

**Gordon Burton** - Bass

Rob Carson - Bari Sax, Flute

Ted Clifford - Alto Sax,

Clarinet

Orvil Dillenbeck - Trumpet

Brenda Forsythe - Euphonium

Malcolm Griffiths - Drums

**Dale Tapp** - Alto Sax

Darlene TerMarsch - Piano



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### Wishing the Deep River Players a safe, joyful show!





**Dr. Jon Stephenson** 4 Glendale Ave. 613-584-9971

Wishing the Players a cracking good performance!



# **SOUND OF NEUTRONS QUIZ!**

- 1. How many of the characters are based on and named after real people?
- 2. Did Bruno really cheat on his wife by bringing a woman to Boston?
- 3. The real Bruno Pontecorvo was nicknamed after which handsome movie star: a) Rudolf Valentino b) Clark Gablec) Ramon Novarro d) Sean Connery
- 4. True or False: Bruno Pontecorvo worked with Marie Curie?
- 5. What technical inaccuracy about ZEEP is included in the script?
- 6. Who named the town of Deep River? a) Dr. Cockcroft b) CD Howe c) Anne Aikens d) Father McElligott
- 7. How many Nobel Prizes did Dr John Cockcroft win? a) 0 b) 1 c) 2 d) 3
- 8. What words did CD Howe (Minister of munitions and supply) use to approve the Canadian nuclear program?
- 9. True or False: ZEEP was the second reactor to go critical (start-up) outside the USA.
- 10.What day did ZEEP first go critical (start-up)?
- 11. What were the first homes in the townsite called?
- 12. Who was the first woman to work at the plant?
- 13. How many actors were in both the 2020 version and the 2025 version of the show? a) none b) 1-10 c) 10-20 d) more than 20 e) all of them
- 14. Who is the youngest to act in both versions of the show?
- 15. How many cast members are playing the same role they did in 2020? a) none b) 1-5 c) 5-10 d) more than 10
- 16. Who's playing the character their older brother played in 2020?



# **SCENE LIST & LOCATIONS**

### ACT I July 1945

Scene 1	A farm in Calabogie
Scene 2	The ZEEP Reactor Hall
Scene 3	. Chalk River Train Station 🧍



Scene 4 ...... Cockcroft's Receptionist's Office

Scene 5 ....... Outside the Townsite Post Office

Scene 6 ...... Stan's House on Beach Avenue
Scene 7 ...... Chalk River Train Station

Scene 8 ...... Stan's House on Beach Avenue

Scene 9 ...... The ZEEP Reactor Hall

Scene 10 ...... Stan's House on Beach Avenue

### ACT II Aug.-Sept. 1945

Scene 1	CD Howe's office and Dr Cockcroft's house
Scene 2	Chalk River Train Station
Scene 3	The ZEEP Reactor Hall
Scene 4	Outside the Townsite Post Office
Scene 5	The ZEEP Reactor Hall
Scene 6	Stan's House on Beach Avenue
Scene 7	Stan's House on Beach Avenue
Scene 8	The ZEEP Reactor Hall
Scene 9	Chalk River Train Station
Scana 10	Stan's House on Reach Avenue







# **PROLOGUE**

"Okay, Let's Go!"

The words spoken by C.D. Howe, Minister of Munitions and Supply on August 17<sup>th</sup>, 1942 in Parliament to give approval for funding the nuclear program in Canada. This was the beginning of the nuclear era in Canada. The rest is history...

This play is not! (Well not entirely).

The events depicted in this theatrical performance are fictional. Some are based on actual events but blatant disregard for historical accuracy is rampant. This performance is intended for immature audiences. Viewer enjoyment is strongly advised. Dun dun!



LEFT: Overview with NRX and ZEEP, June 21, 1945. Photo Source: AECL. Courtesy of The Society for the Preservation of Canada's Nuclear Heritage.

RIGHT: An, aerial photograph of Deep River taken in 1950. Shows the early stages of development of the town.
Courtesy of The Society for the Preservation of Canada's Nuclear Heritage.





# MUSICAL NUMBERS



- 1. The Sound of Neutrons (To the tune of "The Sound of Music" from "The Sound of Music" by Richard Rodgers & Oscar Hammerstein II)
- 2. Atom Splattin' Physicist from Calabogie (To the tune of "Boogie Woogie Bugle Boy" by Don Raye & Hughie Prince)
- **3. Stan Feelgood** (To the tune of "Caldonia" by Louis Jordan)
- **4. I have confidence** (To the tune of "I have confidence" from "The Sound of Music" by Richard Rodgers, & Oscar Hammerstein II)
- 5. I'm a Waitress, You're a Physicist (To the tune of "You are 16 going on 17" from "The Sound of Music" by Richard Rodgers, & Oscar Hammerstein II)
- 6. Uranium Our Favourite Atom (To the tune of "Doe a Deer" from "The Sound of Music" by Richard Rodgers & Oscar Hammerstein II)
- 7. Five Kids Named Moe (To the tune of "Five Guys Named Moe" by Louis Jordan)
- 8. Polymer and X (To the tune of "Strangers in the Night" by Bert Kaempfert)
- 9: Hallelujah, I Just Love My Joe (To the tune of "Hallelujah, I Just Love Him So" by Ray Charles)
- 10: Chalk, Chalk Chalk River (To the tune of "Choo choo cha boogie" by Vaughn Horton, Denver Darling, & Milt Gabler)
- 11: ZEEP REACTOR (To the tune of "Chitty Chitty Bang Bang" by Robert B. Sherman, & Richard M. Sherman)





**12: But Now I See You** (To the tune of "Why Don't You Do Right?" by "Kansas Joe" McCoy)

**13: U-R-A-N-I-U-M** (To the tune of "634-5789" by Eddie Floyd & Steve Cropper)

**14: Eye of the Tiger** (by Survivor/Frankie Sullivan & Jim Peterik)

**15: There Ain't Nobody Here But Us Cleaners** (To the tune of "Ain't Nobody Here but Us Chickens" by Alex Kramer & Joan Whitney)

**16: I can't Get No Chain Reaction** (To the tune of "Satisfaction" by Mick Jagger & Keith Richards)

**17: What a Wonderful Place** (To the tune of "What a Wonderful World" by Bob Thiele (as "George Douglas") & George David Weiss)

**18: The Lonely Loon** (to the tune of "The Lonely Goatherd" from "The Sound of Music" by Richard Rodgers & Oscar Hammerstein II)

**19: Supercritical Atomic Sustained Chain Reaction** (to the tune of "Supercalifragilistic expialidocious" from "Mary Poppins" by Robert B. Sherman & Richard M. Sherman)

**20: White Pine Trees** (To the tune of "Edelweiss" from "The Sound of Music" by Richard Rodgers & Oscar Hammerstein II)

**21: DEEP RIVER** (To the tune of "Shake" by Sam Cooke)

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### THE PEOPLE WHO MADE IT HAPPEN

**Director**: Phyllis Heeney

**Assistant Director**: Esther Stephens

**Producer**: Sandra Celovsky

Music Director, Band Leader: Gordon Tapp

Vocal Directors: Steve Bemis, Gord Burton (Scientists),

Candace Graham (Children), & Nicole Lebel (Ladies)

Prompter: Rona Cleland

Choreographers: Bridget Chiasson, Kristen Glowa, Mac Jones,

& Lesley Levinski

Stage Manager: Susan McBride

Assistant Stage Manager: Christine Gallagher

Stage Crew: Neil Kelley, Andrew Masala, Jesse Rhodes,

& Kyle Yeates

Set Designer: Pat Playford

Set Painting: Elaine Bisson, Anne Davies, Juliana Feenstra,

Phyllis Heeney, & Pat Playford

House Decorating: Society for Preservation of Canada's

Nuclear Heritage

Construction Crew: George Ginn (lead), Mike Beale, Sam

Bessey, Ike Dimayuga, Juliana Feenstra, Phyllis Heeney, Neil

Kelley, Jesse Rhodes, Kody Sullivan, Eppo Van Houten,

Jacques Vincelette, Kyle Yeates, Paul Zdrazil, & May Zhang

Costume Design: Sarah Klein

Costume Assistants: Sandra Celovsky, Suzanne Dunford,

Catherine Feenstra, Lori Gilbert, Phyllis Heeney,

& Elizabeth Jones

Dressers: Bev Byrnes, Candace Graham, & Ann Turney

Sound Design: Terry Moss

### THE PEOPLE WHO MADE IT HAPPEN CONT'D.

Lighting Design: Molly Zaugg

Lighting Assistants: Duston Baranow-Watts, Christine

Bourgeois, Jim Bourgeois, Leo Cahoon, Alice Holt, Pablo

Maqueo, Mitchell Morrison, & Patrick Morrison

Props Master: Mary Ter Huurne

Props Assistant: Ivy McNeely & Janice Wilson

Make-up Lead: Samantha Bessey

**Hair Lead**: Shonna Boutin

Dog Handler: Abby Sullivan

Cast Photo: Ken Lundie

Advertising Sales: Bob Montague

Treasurer: Anne Davies

**Artwork/Logo**: Jeremy Whitlock

Publicity Manager: Sara Bessey

Website: Jeremy Whitlock

**House Manager**: Krista Matisko

**Ushers**: Emalynn Boutin & Damon Dancey

Craft Service: Cheryl Rhodes & Nora Waddell

Tickets Manager: Sara Bessey & Anne Davies

Program Designer: Susan Kendal Urbach

Opening Night Gala Coordination: Patti Kinghorn









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### Susan Sing

T. Fourteen - Marianne, Bruno, Gil, Tito and Antonio Pontecorvo, Dr. Cockcroft, Rejeanne, Gaston, Dennis and Doris Houde, CD Howe, Father McElligott, Lew Kowarski, Walter Movytowish

Woytowich. 2. No – he actually brought two women with

him to Boston. 3. C) Ramon Novarro.

4. False. He actually worked with Irene Joliot-

Curie (Marie Curie's daughter). 5. ZEEP's core was made of Aluminum not Zirconium. NRX and NRU had loop pressure tubes that were lined with Zirconium. I just

liked the word. 6. d) Father McElligott – just like in Act 2:10. 7. b) 1 in 1951/

8. "Okay, let's go" August 17 th 1942.

9. False – ZEEP was the first reactor to go

critical outside the USA. 10. September 2nd 1945 but they didn't know it until Sept 5th 1945 which is its

official start-up date. The instrument was not sensitive enough to detect the start-up. Only when they projected the shadow of the

needle on the wall were they able to see the neutron flux. See Act 2:8.

11. War Fours and War Sixes – They were prefabricated 4 and 6 room houses, brought

from Cobalt, Ontario.

12. Margaret Cook, who did the teletyping.

Her first chair was a keg of nails with a cushion on top like in Act 1:4. But Miss Wigglebottom is based on Carol Burnett's Wigglebottom is based on Carol Burnett's

Mrs Wiggins. 13. c) 10-20. (Specifically 14).

14. Penelope Primeau – Jodie played Gracie while pregnant in 2020.

15. b) only 4 – Marianne, Dr. Cockcroft, Gaston, CD Howe.

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