[Dams-Water No. 2]

NEWS BUREAU

GENERAL ELECTRIC

SCHENECTADY 5, N. Y.

October 13, 1964

Dear Editor:

The 21st century, not so far away now, will bring us enormous changes -- in the opinion of Dr. George L. Haller, General Electric vice president for advanced technology.

Some of the changes Dr. Haller foresees are contained in the attached new release which I thought you might find of interest.

Sincerely,

J.J. Moran

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JJM:cck

Dr. George L. Haller, vice president in charge of advanced technology services, told the Instrument Society of America's annual meeting here:

"By the end of this century, starvation can be obsolete. We will be able to produce more food than we consume, not only in a few areas, but throughout the world. We should be well on the way to creating synthetic foods, independent of the soil."

The human life span, he predicted, will be appreciably lengthened as we learn more about the ageing process and as we develop and perfect artificial organs to replace those worn out by disease.

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J.J. Moran

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NEW YORK CITY, Oct. 13 -- An end to starvation, longer life, and the ability to change hereditary traits are some of the far-reaching advances which man can achieve by the close of this century, a General Electric Company executive declared yesterday.

Dr. George L. Haller, vice president in charge of advanced technology services, told the Instrument Society of America's annual meeting here:

"By the end of this century, starvation can be obsolete. We will be able to produce more food than we consume, not only in a few areas, but throughout the world. We should be well on the way to creating synthetic foods, independent of the soil."

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He told the engineers and scientists, "before the century ends, it will be possible to change hereditary traits -- in plants, in animals and in man. We will unravel the genetic code which determines the characteristics that pass from parent to offspring."

He said that by the year 2,000 we should also see:

Vastly increased reserves of electric energy: "Virtually limitless."

New sources of scarce materials: "The oceans will be 'mined' for metals, and long before we run out of minerals we will have techniques for synthesizing all kinds of materials from air, water, and common elements of the earth's crust."

New means of communication: "Through relay satellites and laser (light ray) beams, it will be possible to communicate with anyone, anywhere, any time. Individuals equipped with miniature television transceivers will communicate with one another over personal channels as we do today by telephone."

New worlds to explore: "The physical frontiers of the year 2,000 will be deep within the earth and far out in space. Exploration of the moon and the nearer planets will be under way, with manned outposts following close on the trail of telemetered, instrumented robots."

New forms of transportation: "They will be powered by nuclear energy and fuel cells. No points on earth will be more than three or four hours apart."

New "problem-solving" techniques: "The 'information revolution' will have multiplied a thousand-fold man's capacity for problem-solving and creative thinking. Ordinary people will have access to computers as they now have access to electric power, automobiles, or telephones."

In preparing for these changes, he said, human abilities need to be upgraded -- to match the speed, accuracy, range and reliability of machines.

Thanks to instrumentation and control systems, he said, we have vastly more information to know and to use -- "but our human abilities haven't changed correspondingly."

He said he believes there are three things we can do to correct this imbalance:

1. "First, each of us should broaden his range of interest and competence beyond the narrow field of our technical specialty. We should learn to look for and to recognize the social and political effects of technical work ...

2. "We should strive to extend the assistance that information machines can give to human brains. Computers already help us do certain kinds of mental work, but the potential help to human decision-making that might be provided by systems engineering concepts and data handling machines has scarcely been touched.

3. "We must continue our education."

The main challenge to our world today is accelerating change, ever widening choices, he said. "Change has always been a part of the human condition. What is different now is the pace of change, and the prospect that it will come faster and faster, affecting every part of life, including personal values, ... which seem most remote from technology. Trying to 'make sense' of change will be our highest task."

All the resources of our society, Dr. Haller reminded the conference, boil down at last to individual people -- "living computers with all their imperfections, plus the occasional spark of genius. Industries and institutions just cannot seem to organize the creative man completely. He still eludes our social system, and therein lies our best hope of solving the unknowable, unguessable problems and the monstrous complexities and pressures."

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