Comments Submitted for 1/19/2021 Workshop Consideration From Chao-Hsiung Tung, Ph.D. G3 Labs, LLC

Current NCCR	Comment	Recommendation
12.065 Cannabis treated	A. Regulatory Authority	Delete section
with radiation. If any		12.065.
cannabis or cannabis	Nevada, being an agreement State,	
product has been treated	assigns all activities related to the	
with radiation at any	use of radioactive material to the	
time, any and all	purview of Department of Health	
packaging of the	and Human Services Division of	
irradiated cannabis or	Public and Behavioral Health. NRS	
cannabis product must	459 clearly designates such	
include labeling that	responsibility. NCCR section 12.065	
contains the following	does not correlate with, and	
statement: "NOTICE:	therefore supplants that regulatory	
This product contains	authority in Nevada.	
ingredients that have	, and the second	
been treated with	B. Scope	
irradiation" in bold	•	
lettering, along with the	NAC 459.068 "Radiation"	
Radura symbol as used	defined. (NRS 459.201) "Radiation"	
by the U.S. Food and	means ionizing radiation, that is,	
Drug Administration	gamma rays and X-rays, alpha and	
	beta particles, high speed electrons,	
	neutrons and other nuclear particles.	
	Assuming NCCR Section 12.065	
	invokes the NAC 459.068 definition,	
	the text implies permission to use	
	ionizing radiation, that is, gamma rays	
	and X-rays, alpha and beta particles,	
	high speed electrons, neutrons and	
	other nuclear particles to treat	
	cannabis. This wide application	
	ignores the reality that the some of	
	these "radiations", such as alpha	
	and beta particles and neutrons are	
	impractical for any	
	treatment/irradiation of cannabis; it	
	also creates coordination difficulties	
	for the governing regulatory	
	authority.	

C. Treatment/Irradiation of Cannabis

While a radiation control program (thus the radiation-producing machines) would be under the purview of Department of Health and Human Services Division of Public and Behavioral Health, no regulatory specifications exist within that department for radiation/irradiation of cannabis. Nevada Department of Agriculture refers irradiation of seeds to FDA (NRS 587.889.2.(k)). At a glance, Department Food and Drug Administration (FDA) does specify certain requirements applicable to radiation/irradiation of food and food additives. However, the irradiation of cannabis is not addressed under any of those requirements.

At the designated extremely low dose, radiation is very effective to reduce or eliminate microorganisms that may harm the consumer. The implied assumption that treating cannabis with radiation/irradiation will result in harmful residues is unfounded. Currently, the ionizing radiation for the treatment of food is limited to gamma-rays, electrons, and X-rays (21 CFR 179.26). There are also radiofrequency radiations, including microwave frequencies, ultraviolet radiation, and pulsed light (21 CFR 179.30~41). All these treatments, when used per regulations, are considered safe without harmful effects to consumers.

D. "NOTICE: This product contains ingredients that have been treated with

irradiation"

This "NOTICE" is very misleading. 21 CFR 179.26(b) delineates a threshold for radiation/irradiation dose levels before a labeling requirement is applicable. NCCR 12.065 applies the FDA food labeling requirements to irradiated cannabis without any dose level threshold. As such, the "NOTICE" not only provides zero added value for public health protection, it will falsely create a perception of potential harm.

Additionally, FDA does not require that individual ingredients in multi-ingredient foods (e.g., spices) be labeled. Cannabis production products, such as candies, drinks, and lotions are all multi-ingredient products.

The FDA clearly states in its Food Irradiation: What You Needs to Know that "Food irradiation does not make foods radioactive, compromise nutritional quality, or noticeably change of the taste, texture, or appearance of food." "Food irradiation ...improves the safety and extends the shelf life of foods by reducing or eliminating microorganisms..."

Further, in its draft publication "Cannabis and Cannabis-derived Compounds: Quality Considerations for Clinical Research Guidance for Industry (July 2020)," FDA outlines the current thinking on cannabis and cannabis-derived compounds. It is that they "may be used in drug manufacturing include botanical raw materials, extracts, and highly purified substances of botanical

origin." Thus, it clearly excludes cannabis as food.	
Cannabis in Nevada is not a food. An unprecedented regulation with such complexity involving radiation/irradiation and FDA foodlabeling requirements should not be made unilaterally without legislative considerations and processes.	