

# The Three Tiers for Critical limits

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Effective risk communication is crucial to reducing risk and it is a core principle of risk management.

The FDA Food Code has embraced the principles of HACCP from a process perspective, whereby throughout the code critical control points are denoted as **Priority items** (<sup>P</sup>), control points, or the control procedures needed to ensure compliance of the Priority item are referred to as **Priority foundation** (<sup>Pf</sup>), and standard sanitary operating procedures (SOP's, which have also been called *prerequisite programs*) are referred to as **Core items**.

The above recent addition/revisions to the code were implemented in part to enhance the risk communication relative to common food product/processes. It is well known that effective risk communication requires that those in the communication loop share the same perspective and frame of reference. Because the FDA Food code is constantly evolving, the specific critical limits in today's code are often different than those found in food rules published in older editions. This presents a moving target due to the different dates of rule adoption by the many dozens of States and the thousands of boards of health and other licensing authorities.

This jurisdiction-to-jurisdiction variability confuses food handlers, risk managers and the public yielding ineffective risk communication. When people do not understand the basis for the variability of critical limits, the integrity of the whole code suffers with a corresponding increase in risk.

Here is but one example of the above referenced critical limit confusion: *what is the critical limit for hot food holding?*

The answer: it depends where you are and what you are talking about.

Effective risk communication mandates that we cut through this fog and clearly articulate facts.

To keep our process HACCP risk communication effective, we must have a tight correlation of each stated critical limit to our intended point of reference.

There are up to *three different critical limit concepts* or points of reference for every *pathogen* related critical control point:

1. **The science based critical limit.** Lets call it the "SCL". It is the same in Saigon as in St. Paul. If we identify all of the environmental and food characteristics that give rise to the given microbial hazard, then we can agree upon peer reviewed published data and given statistical analysis and the consensus standards process establish a single **fixed "SCL"**. With that, we'd likely say that 127.5F is the SCL for hot food holding based upon peer reviewed, published scientific research (*F. Busta, et al*).
2. **The compliance critical limit.** Lets call it the "CCL". In Minnesota, since their administrative rule (MR4626) is based on the 1995 FDA Food Code, that minimum hot

safe food holding temp is 140F. In Maryland where they modeled code after the 2008 FDA Food code and their Title 10, subtitle 15 Chapt 03.06 states: “(7) Except as provided in §B(8)—(14) of this regulation, the internal temperature of a potentially hazardous food is kept at 41°F or less or 135°F or greater”. The downward revision to 135F was hotly debated for several CFPs with data presented in council 3 to support the scientific critical limit was at least 12 degrees below 140. The revision finally passed at the '08 conference. (comment: some will say that the point at which the critical limit should be measured is a core temp. *This is not true.* Surface temps are most likely to be abused when you are hot or cold holding....not core temps.) Note that the **CCL's change based upon the local licensing authority,** and the method and means for measuring the critical limit may vary by interpretation and inspector. Further confusion abounds do to differences in equipment performance test standards critical limits and the food codes criteria. For example, the NSF/ANSI standard 7 critical limit measurement point for cold holding is 1” below the surface of the food. The food code requires all of the food to be at the stated CL or better without exempting the top 1” layer of food. Then, where is the point of measurement for hot holding critical limit relative to the code vs. NSF/ANSI Std 4? These “gaps” reduce the effectiveness of the codes risk message.

3. **The quality critical limit.** Lets call this the “QCL”. One of my global QSR clients sets a QCL for hot food holding at 160F. One of their franchisees sets a QCL for his stores at 165. **QCL's change with each operator.** In some cases it varies by franchisor. But in others it may vary from one franchisee to another. Multiunit operators food safety plans must have the flexibility to accommodate these differences without confusing its food handlers and risk managers at corporate and franchise levels.

HACCP is about RISK, not quality. That said many if not most companies integrate quality criteria into their HACCP plans, largely for convenience. Nonetheless, it is not logical to have your QCL as your CCP. You may use the local CCL for your CCP, but the SCL must be also stated so food handlers and risk manager can better understand the required interventions for the stated hazard given its scientific underpinnings.

If everyone that got certified as a food manager by one scheme or another had this fundamental differentiation as a part of their training, then they would have the foundation to understand the science based limit and the public health rationale for the compliance critical limit being different specific values.

Further, by accommodating a quality critical limit, retailers and food service operators can create a single HACCP plan (or food plan if you prefer) with dramatic improvement in the effectiveness of their plans risk communication.

Effective risk communication is fundamental to risk analysis and management. HACCP is mush without it.

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