



<b>TECHNICAL MEMO #</b>	201703	<b>DATE</b>	4/14/2017
<b>ENGINEER</b>	Sam Abdelfattah	<b>DATE UPDATED</b>	N/A
<b>SUBJECT</b>	Economizer Requirements in IECC-2012, vs Small DX Cooling Split Systems		
<b>DISCIPLINES</b>	Mech <input checked="" type="checkbox"/>	Elec <input type="checkbox"/>	Plum <input type="checkbox"/>
	GAS <input type="checkbox"/>	FA <input type="checkbox"/>	FS <input type="checkbox"/>

**DESCRIPTION**

> IECC 2012, requires economizer for all AHU systems with cooling capacity ≥ 33 MBH. Unfortunately, economizers are not available for most of split systems, particularly smaller systems, up to 5 Tons.

> Therefore the economizer requirements in IECC-2012 very much denies the use of split systems to most of commercial applications.

> ASHRAE 90.1 has more relaxed requirements, because it only enforces economizer for equipment that has cooling capacity 54 MBH or larger.

> IECC-2015 has changed from 2012 version and updated the language to become more in line with the ASHRAE recommendations. The 2015 code does not require economizer for DX unitary cooling equipment with cooling capacity less than 54 MBH.

> In the past, we took advantage of more relaxed requirements in ASHRAE 90.1-2010, unfortunately certain jurisdictions does not allow mixing compliance with IECC-2012 and ASHRAE 90.1-2010 in the same project. Therefore, in these jurisdictions additional prudence is required on our part in early design phase to verify the county requirements. I suggest the design engineer should inquire if a code modification request is required, also should make the client aware that if we were to use larger split systems (capacity over 3 Tons) the design might be declined by county.

> In recent correspondence with Prince William County mechanical plans review to explain the challenge, they agreed to accept use of 2015 IECC to avoid economizer, as long as following note is added:

"PER IECC-2015, SECTION-C403.3, EXCEPTION 2: ECONOMIZER IS NOT REQUIRED WHERE INDIVIDUAL COOLING UNITS HAVE A CAPACITY OF LESS THAN 54 MBH AND HAVE DIRECT EXPANSION COOLING COILS"